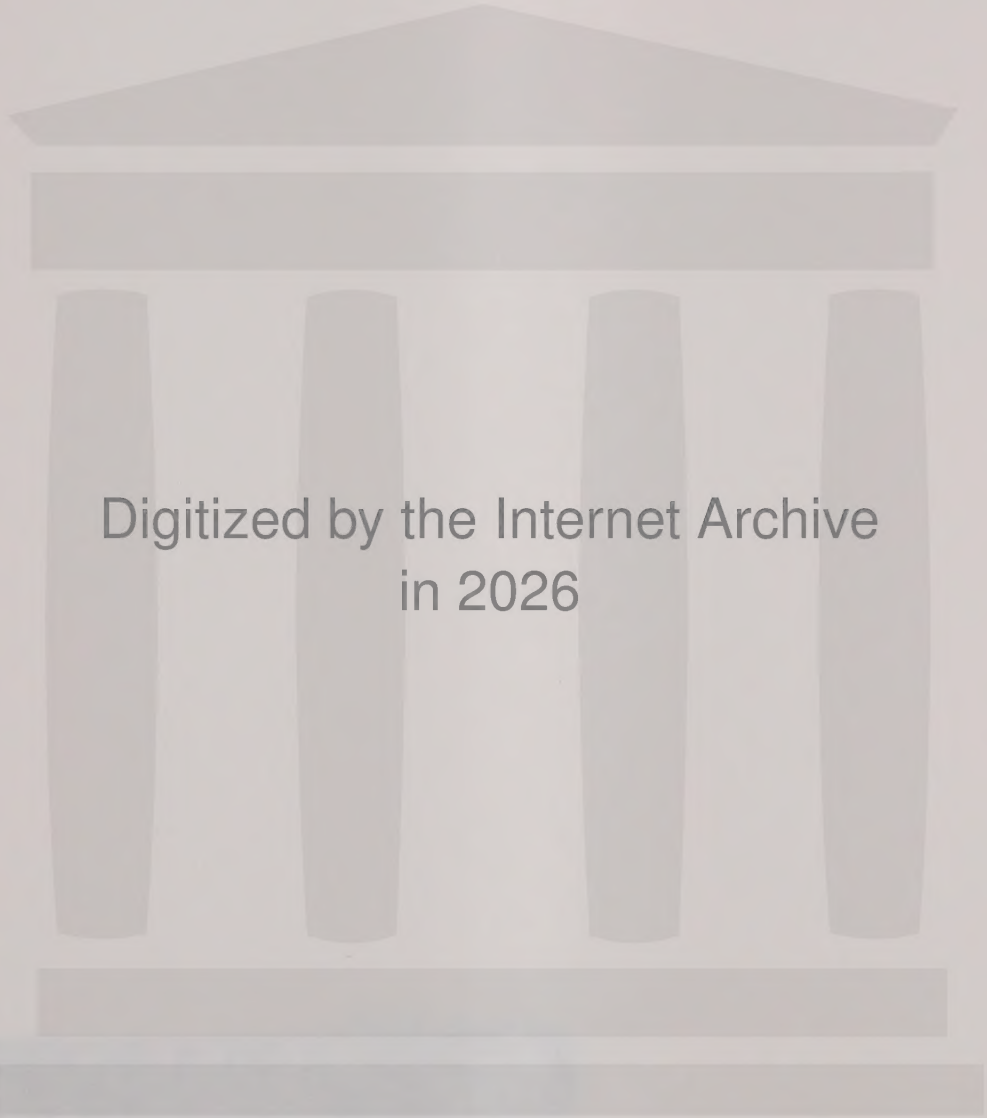
5104
SCHEMATICS

tau-tron

A UNIT OF
GENERAL SIGNAL

5104
SCHEMATICS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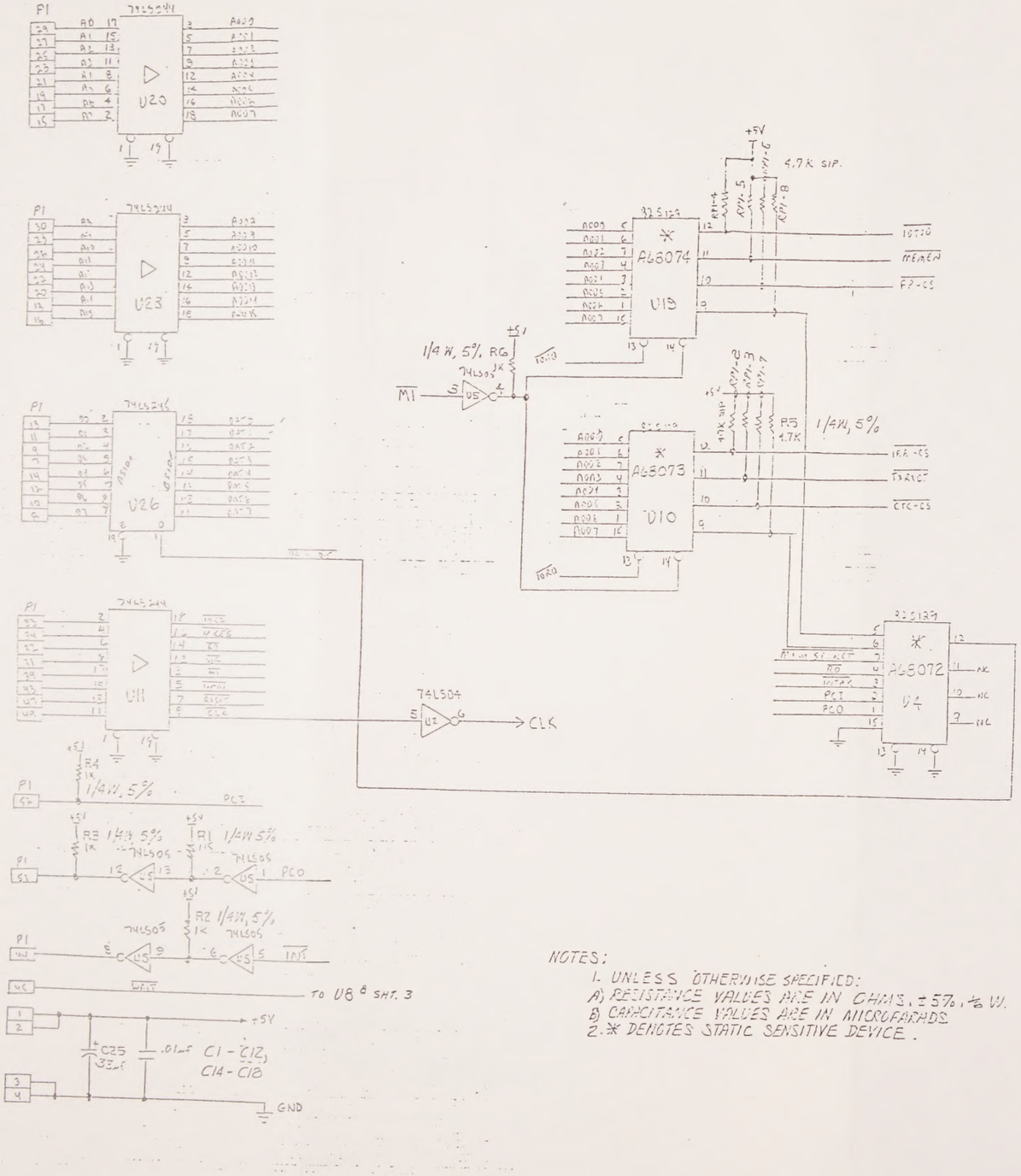
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	I	UPDATED. E.M.B. 5-31-83		
	A	REV PER ECO# 01712 TM 1-12-84	1-13-84	
	B	REV. PER ECO# 01762 EM 3/19/84	3-20-84	
	C	REV PER ECO# 01815 BY SHARP	BY SHARP	
	D	REV PER ECO# 02112 TMM 4-16-85	4/24/85	
	E	UPDATED PER DOC. ACCURACY PROG PER ECO# 02173 6-19-85	6/24/85	
	F	REV PER ECO# 02442 TMM 4-21-86	4/24/86	



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A) RESISTANCE VALUES ARE IN OHMS, ±5%, ¼ W.
   B) CAPACITANCE VALUES ARE IN MICROFARADS.
2. * DENOTES STATIC SENSITIVE DEVICE.

WHERE APPLICABLE REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	
D-57432	35104
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± ½°
FRACTIONS ± 1/32
3 PLACE DECIMALS ± .010
2 PLACE DECIMALS ± .01
1 PLACE DECIMALS ± .1
MATERIAL: —

CONTR NO.

DR	C. Lally	12-27-83
CHK	M. Jones	12-28-83
APPD	C. Lally	12-27-83

APPROVED

BY DIRECTION OF

tau-tron INC Chelmsford, Mass. 01824

DRAWING TITLE
SCHEMATIC
FRONT PANEL CONTROL

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57432	F

SCALE — | 35104 | SHEET 1 OF 3

DEC 17 '86

57432

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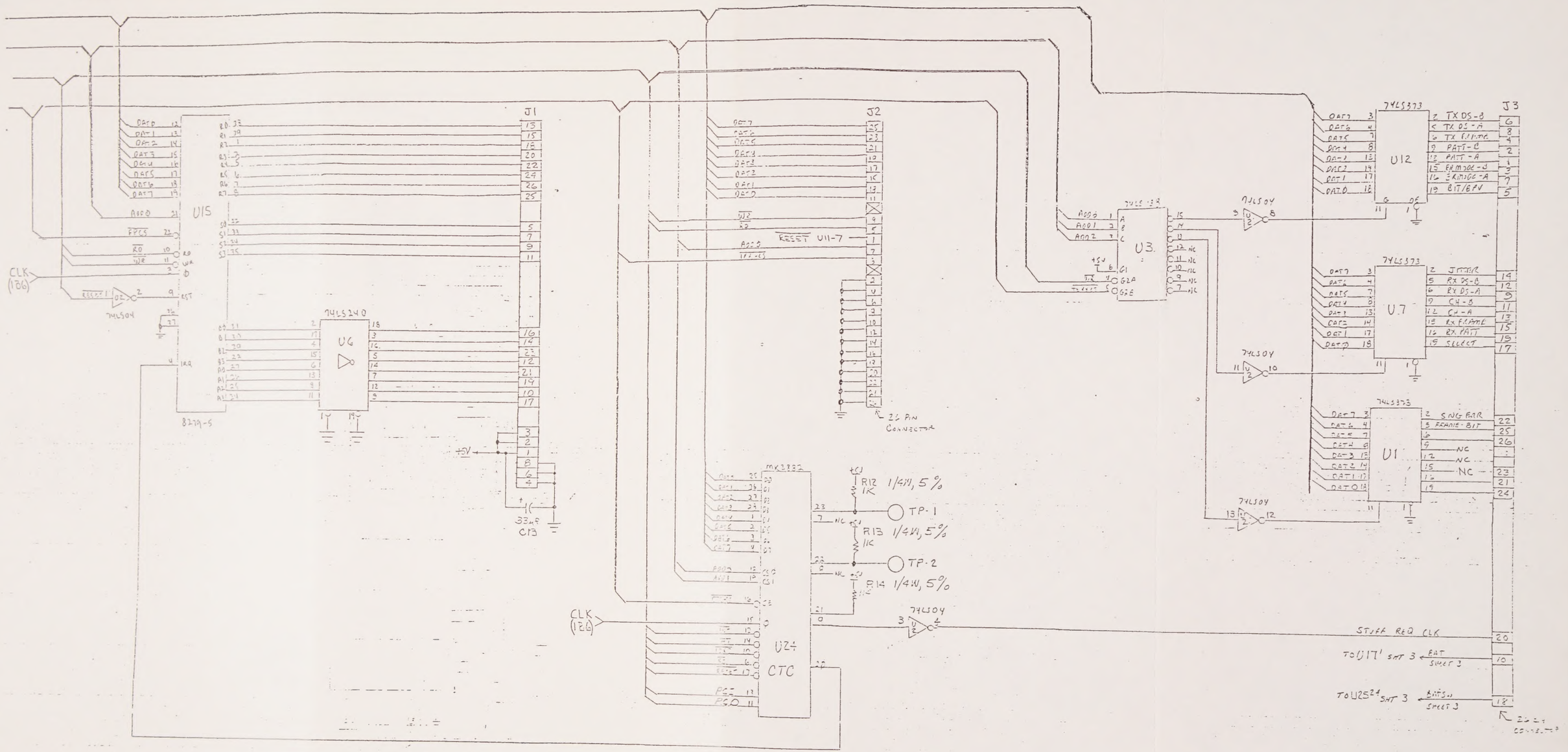
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1 FOR REVISIONS		



D-57434	55104
NEXT ASSY	USED ON
APPLICATION	

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± AL
FRACTIONS ± AL
3 PLACE DECIMALS ± AL
2 PLACE DECIMALS ± AL
1 PLACE DECIMALS ± AL
MATERIAL: AL

CONTR NO.

DR [illegible] 30 NOV 82

CHK /

APPD

APPROVED

BY DIRECTION OF

DEC 17 '82

tau-tron inc
Chelmsford, Ma. 01824

DRAWING TITLE
SCHEMATIC
FRONT PANEL CONTROL

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57432	F

SCALE AL | 55104 | SHEET 2 OF 3

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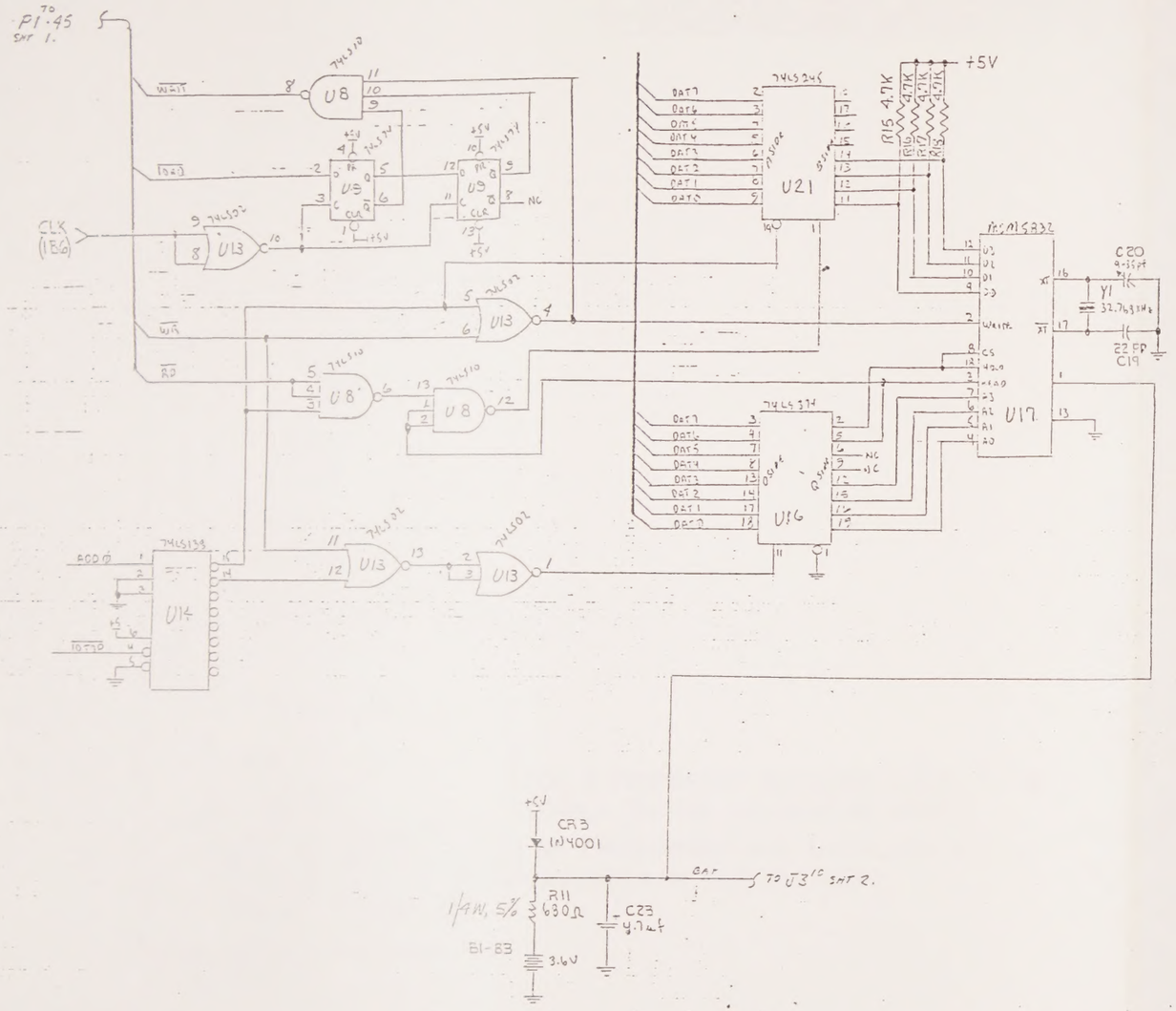
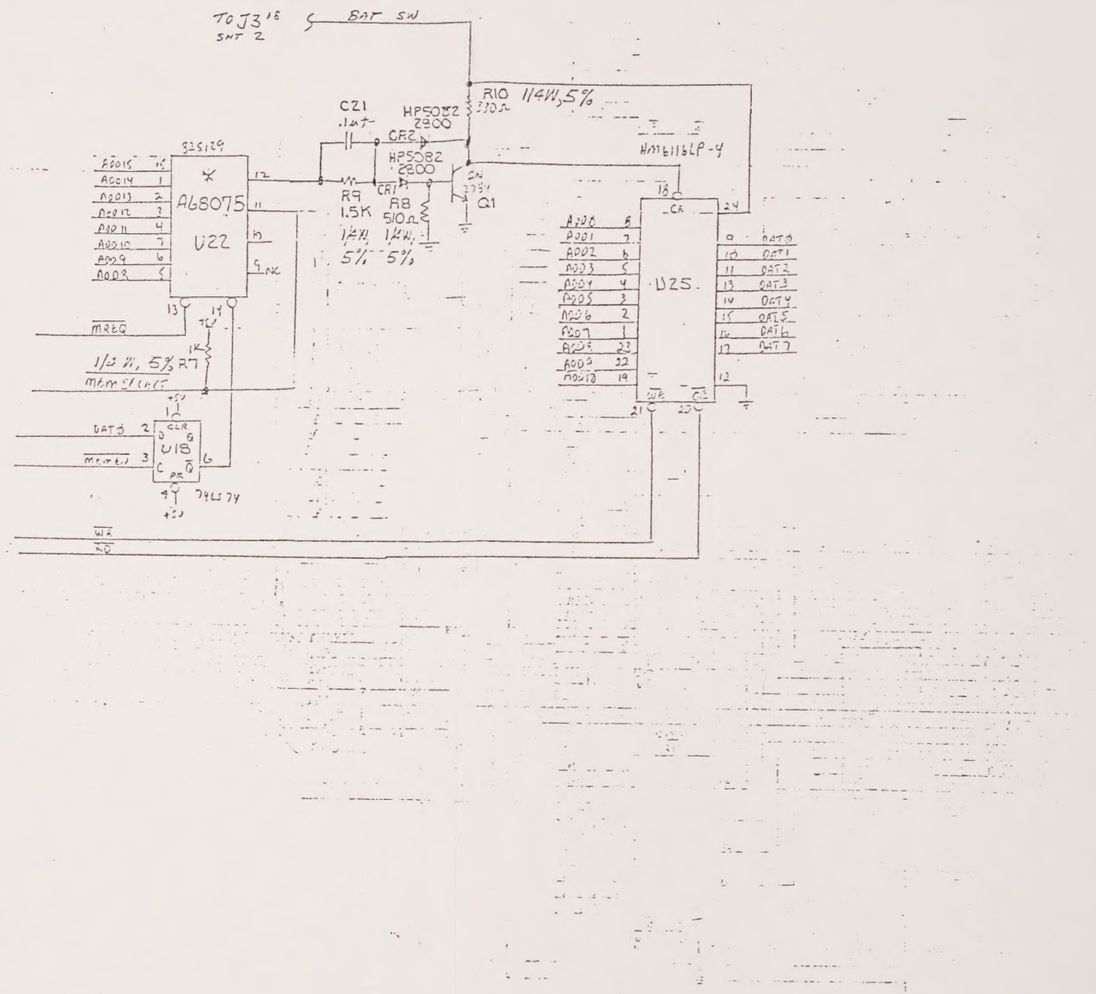
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1 FOR REVISIONS		





WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
	TOLERANCES: ANGLES ± AL
	FRACTIONS ± AL
	3 PLACE DECIMALS ± AL
	2 PLACE DECIMALS ± AL
	1 PLACE DECIMALS ± AL
D-57434 / 55104	MATERIAL: AL
NEXT ASSY / USED ON	
APPLICATION	

CONTR NO.		
DR [illegible]	30 Nov 82	
CHK RL	12.30.82	
APPD		
APPROVED		
BY DIRECTION OF		

DEC 17

tau-tron INC Chelmsford, Ma. 01824

DRAWING TITLE
SCHEMATIC
FRONT PANEL CONTROL

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57432	F

SCALE AL | 55104 | SHEET 3 OF 3

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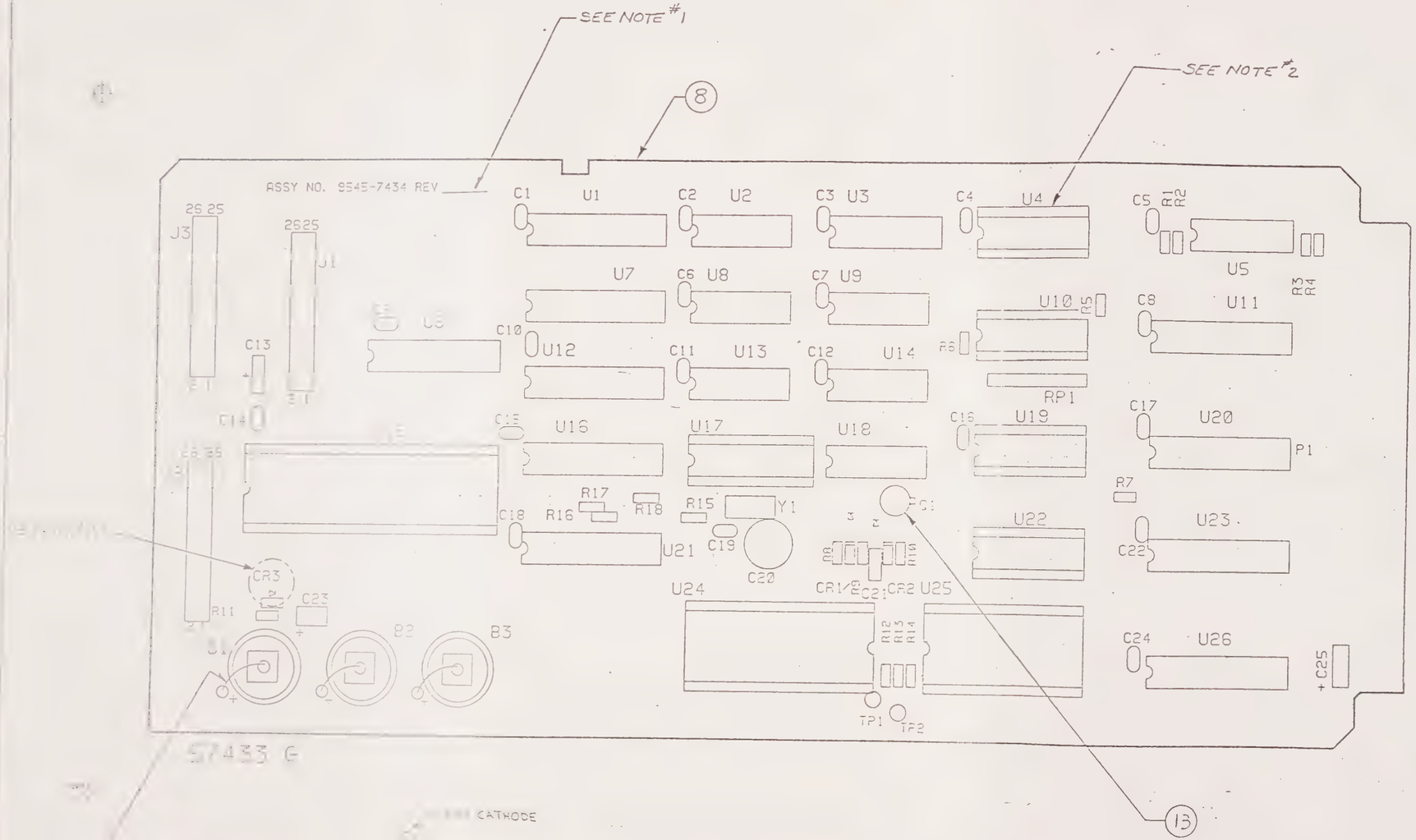
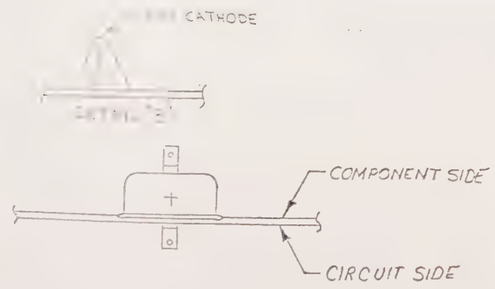
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
	C	REV PER ECO#01815 RR 4-30-84		
	D	REV PER ECO#01846 MEH 5-29-84		
	E	ECO#02112 ANTAL APR'85	4/25/85	
	F	UPDATED PER DOC. ACCURACY PROGRAM PER ECO 02173 6-19-85 DH	6/24/85	
	G	REV PER ECO# 02272 MHH 11/18/85	11/22/85	
	H	REV PER ECO # 02442 MCD 4-24-86	4/24/86	
	J	REV PER ECO # 02513 MCD 6/24/86	6/24/86	



1. PER PEO STANDARD B1, B2, B3



NOTES:

1. PLACE A PERMANENT REVISION LEVEL MARK ON ASSEMBLY IN THE DESIGNATED AREA.
2. TO BE PROGRAMMED AND INSTALLED BY TEST LOCATIONS (U4, U10, U19, U22).

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES-
TOLERANCES ON:
2-PLACE DECIMALS ± .01
3-PLACE DECIMALS ± .005
ANGLES ± 1°
FRACTIONS ± 1/64
ALL SURF. √

MATERIAL- SEE B.O.M.

9545-7534

SIGNATURES	DAY	MO.	YR.
DRAWN ANTAL	22	4	85
CHECKED J.F. STRECKER	4		84
ISSUED			
ENGRG			
MFG			

TAU-TRON

ASSEMBLY DRAWING
S5104 FRONT PANEL CONTROL

SIZE	CODE IDENT NO.	DWG NO.
D		57434

SCALE 2/1 | S5104 | SHEET 1 OF 1 | REV. J

ANTAL ASSOCIATES

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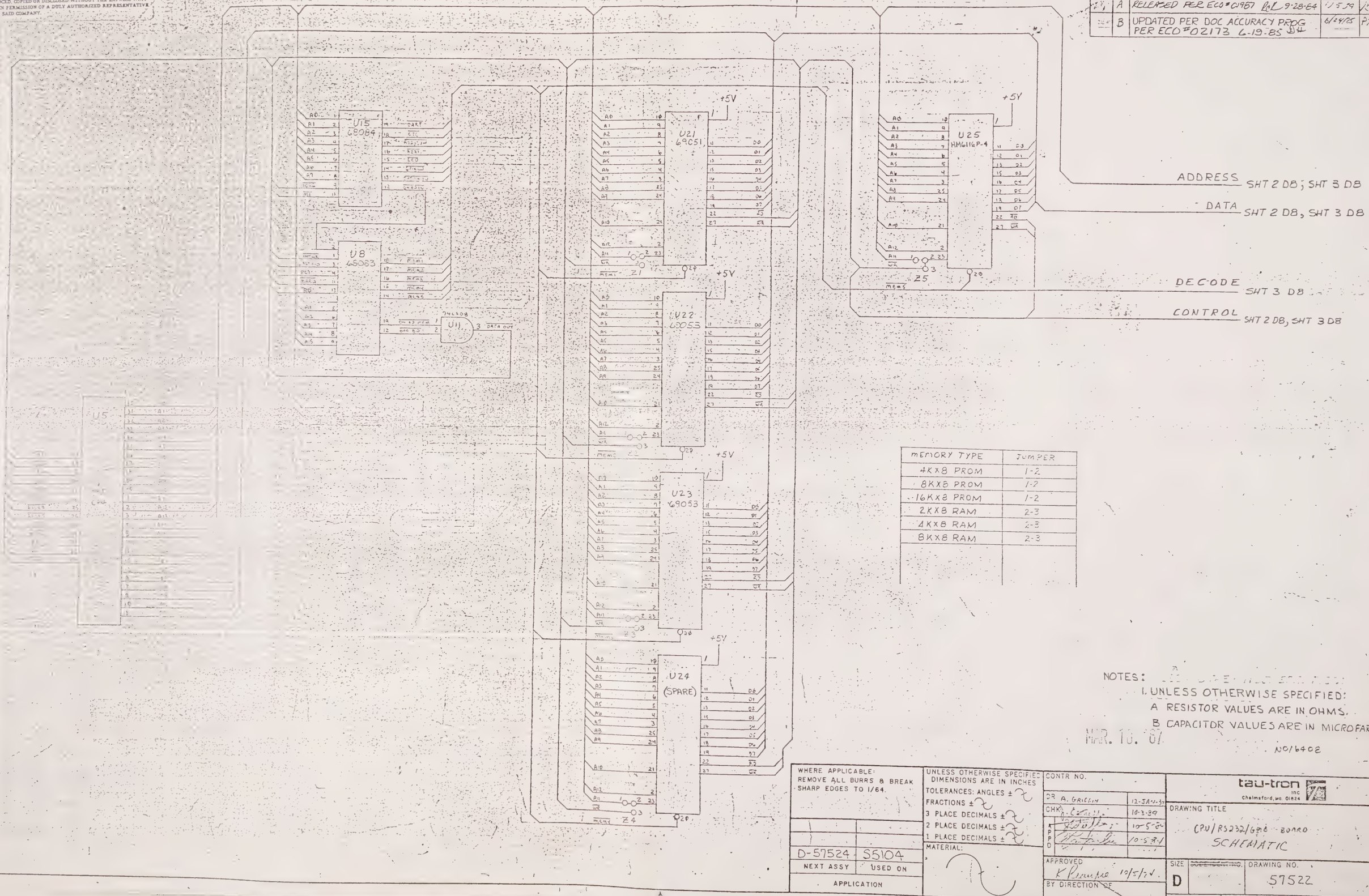
REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	1	UPDATED PER MARKUP (PROM #5) IMM 12-29	3/16/89	
	2	UPDATED PER MARKUP BAP 4-3-89	3/12/89	
	A	RELEASED PER ECO#01967 RdL 9-28-84	11-5-84	
	B	UPDATED PER DOC ACCURACY PROG PER ECO#02173 6-19-85	6/24/85	



MEMORY TYPE	JUMPER
4KX8 PROM	1-2
8KX8 PROM	1-2
16KX8 PROM	1-2
2KX8 RAM	2-3
4KX8 RAM	2-3
8KX8 RAM	2-3

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
A RESISTOR VALUES ARE IN OHMS.
B CAPACITOR VALUES ARE IN MICROFARADS.

MAR. 16. '87
NO16402

WHERE APPLICABLE:
REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

D-57524	S5104
NEXT ASSY	USED ON

APPLICATION

CONTR NO.

DR	A. GRICHUK	12-JAN-87
CHK		10-3-89
APPD		10-5-84
		10-5-84

APPROVED K Pierce 10/5/84
BY DIRECTION OF

tau-tron inc
Chelmsford, Ma. 01824

DRAWING TITLE
CPU/RS232/6936 BOARD
SCHEMATIC

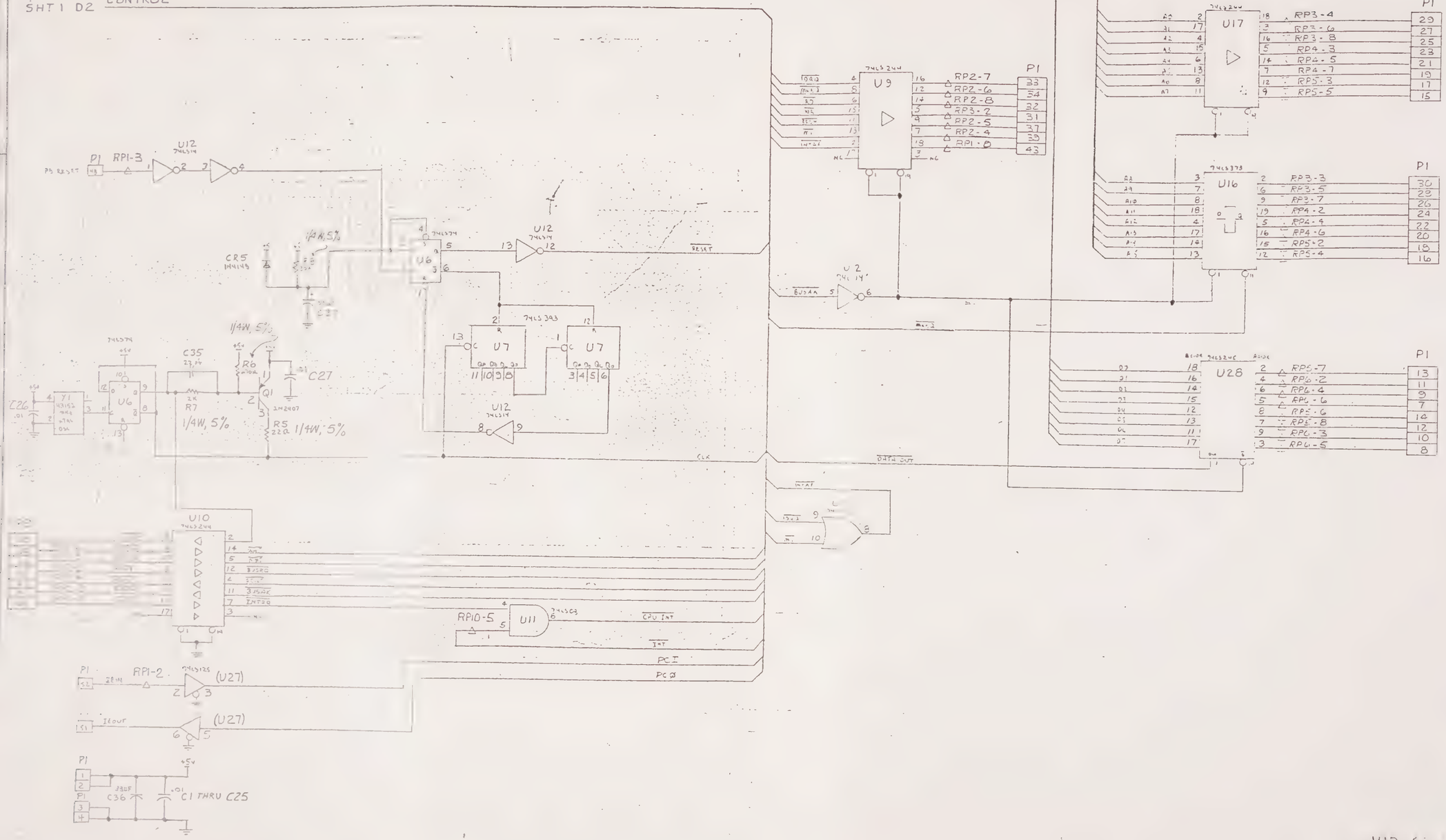
SIZE D | DRAWING NO. 57522 | REV B
SCALE 1/1 | S5104 | SHEET 1 OF 3

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHEET ONE FOR REVISIONS	—	—

SHT 1 D2 ADDRESS

SHT 1 D2 DATA

SHT 1 D2 CONTROL



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MAR. 13. '87

WHERE APPLICABLE:
REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO.

DR	A. GRIFFIN	4-JAN-84
CHK	[illegible]	10-3-84
APPD	[illegible]	10-5-84
APPD	[illegible]	10-5-84

APPROVED
BY DIRECTION OF

tau-tron inc
Chelmsford, Ma. 01824

DRAWING TITLE
CPU/RS232/GPIB BOARD
SCHEMATIC

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57522	B

SCALE — | 55104 | SHEET 2 OF 3

D C B A 57522

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHEET ONE FOR REVISIONS	—	—

DATA SHT 1 D2
ADDRESS SHT 1 D2
CONTROL SHT1 D2
DECODE SHT1 D2

U18 74LS244 — RP10-2, RP6-8, RP7-7, RP7-8, RP7-5, RP7-4, RP7-3, RP7-2 — J1

U19 74LS244 — RP7-6, RP8-8, RP8-7, RP8-6, RP8-5, RP8-4, RP8-3, RP8-2 — J2 GPIB

Z9, Z10, Z11, Z12

U3 Z80 DART — RS232 — J1

U2 8291A — U1 75160, U14 75161 — J2

Z5, Z6

U12 74LS14 — RP10-4

U20 74LS374 — U13 74LS32

R1–R4 4932 Ω — CR1–CR4 — SRQ, TALK, LISTEN, REMOTE

CR1-CR4 R1-R4
550-0405 1/8W, ±5%

4 RP10-3

U4 Z80 CTC MK3882 — RP10-7, RP10-6

4.7K SIP OF D2

U26 74LS244 — S1

MAR. 18. '87

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WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO.

DR	A. GRIFFIN	12-JAN-84
CHK		10-3-84
APPD		10-5-84
		10-5-84

APPROVED

BY DIRECTION OF

tau-tron inc
Chelmsford, Ma. 01824

DRAWING TITLE
CPU/RS232/GPIB BOARD
SCHEMATIC

SIZE	CODE IDENT NO.	DRAWING NO.
D		57522

SCALE — | 55104 | SHEET 2 OF

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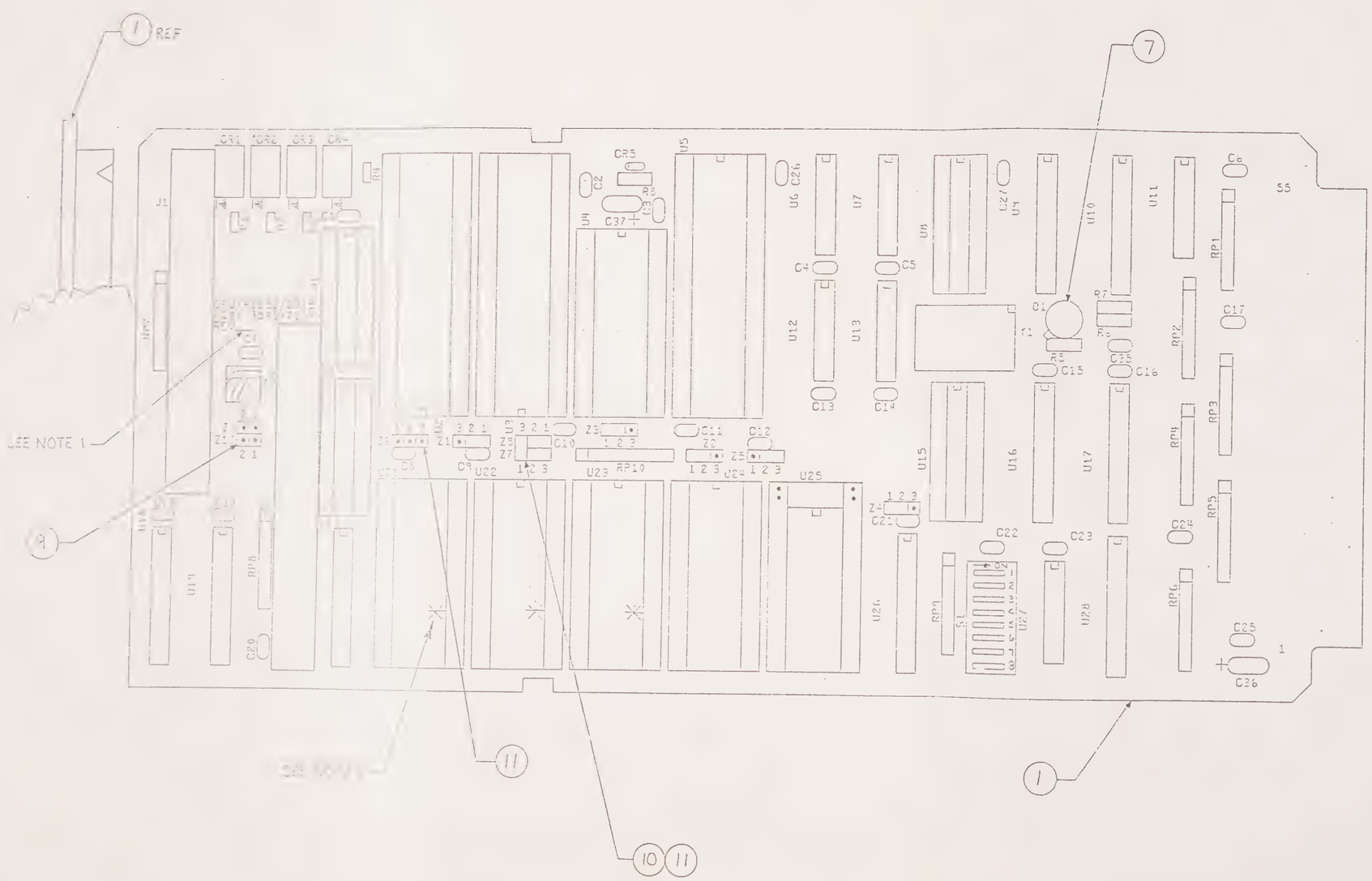
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	RELEASED PER ECO # 01957 9-28-84	10-3-84	
	B	UPDATED PER DOC. ACCURACY PROG PER ECO # 02173 6-20-85 D.H	6/20/85	
	C	REV PER ECO # 02272 MCD 11/15/85	11/20/85	
	D	REV PER ECO # 02474 MCD 5-16-86	5/19/86	



NOTES:
1. PLACE A PERMANENT REVISION LEVEL MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.
2. * - DENOTES STATIC SENSITIVE DEVICES
3. IC'S U8, U16, U21 - U28 WILL BE INSTALLED IN TEST.

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	
	S5104
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ± .010
2 PLACE DECIMALS ± .02
1 PLACE DECIMALS ±
MATERIAL: SEE B.O.M.
9545-7524

CONTR NO.

DR	T. MURPHY	9-12-84
CHK	[illegible]	9-17-84
APPD	[illegible]	9-17-84
	[illegible]	10-3-84
	[illegible]	10-4-84

APPROVED [illegible]
BY DIRECTION OF

tau-tron INC Chelmsford, Ma. 01824

DRAWING TITLE: ASSEMBLY CPU/RS232/GPIB

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57524	D

SCALE 2/1 | S5104 | SHEET 1 OF 1

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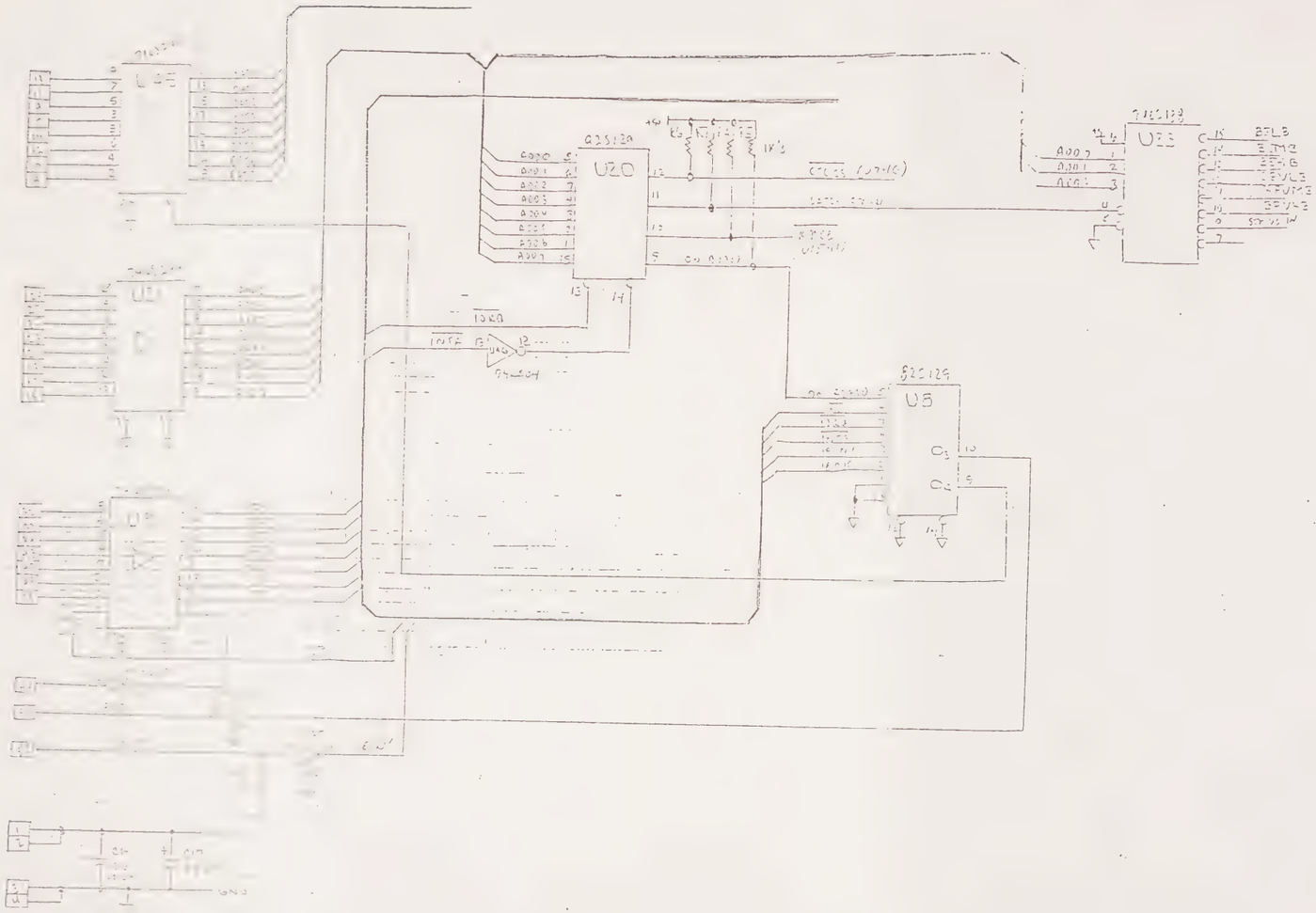
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REV PER ECO # 01712 JM 1-15-84	1-15-84	
	B	REV PER ECO 01774	8/16/84	
	C	UPDATED PER DOC. ACCURACY PROG PER ECO 02173 6-1985 DH	6/24/85	
	D	REV PER ECO # 02408 SHH 3/19/86	3/21/86	
	E	REV PER ECO # 02527 MKD 7/9/86	7/15/86	



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   A) RESISTOR VALUES ARE OHMS, 1/4 W, ± 5%.
   B) CAPACITOR VALUES ARE IN MICROFARADS.

REFERENCE DESIGNATION	
LAST USED	UNUSED
C17	
P12	R11
U47	

WHERE APPLICABLE:
REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

D- 57428	55104
NEXT ASSY	USED ON
APPLICATION	

CONTR NO.

DR	12-20-85
CHK AL	12-27-85
APPD	1-23-87

APPROVED

BY DIRECTION OF

tau-tron inc
Chelmsford, Ma. 01824

DRAWING TITLE
SCHEMATIC
ERROR COUNTER/GENERATOR
PCB

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57426	E

SCALE 55104 SHEET 1 OF 3

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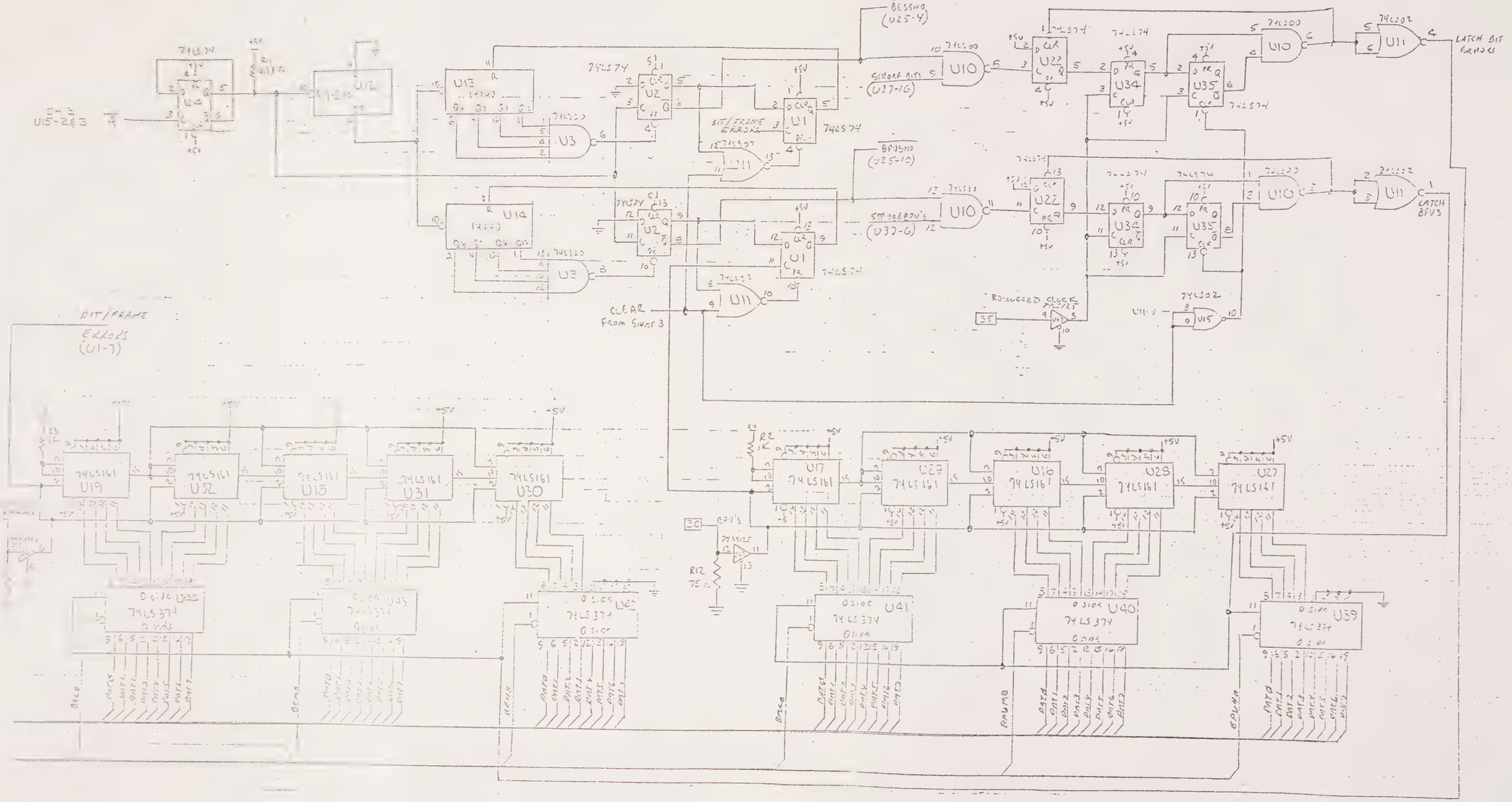
REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	C	SEE SHEET 1		



WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ± FRACTIONS ± 3 PLACE DECIMALS ± 2 PLACE DECIMALS ± 1 PLACE DECIMALS ±
MATERIAL:	
0-57428 / S5104	
NEXT ASSY / USED ON	
APPLICATION	

CONTR NO.

DR A SAT	12-27-82
CHK KL	12-27-82
APPD	

APPROVED

BY DIRECTION OF

tau-tron inc Chelmsford, Ma. 01824

DRAWING TITLE SCHEMATIC
ERROR COUNTER/GENERATOR PCB

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57426	E

SCALE S5104 SHEET 2 OF 3

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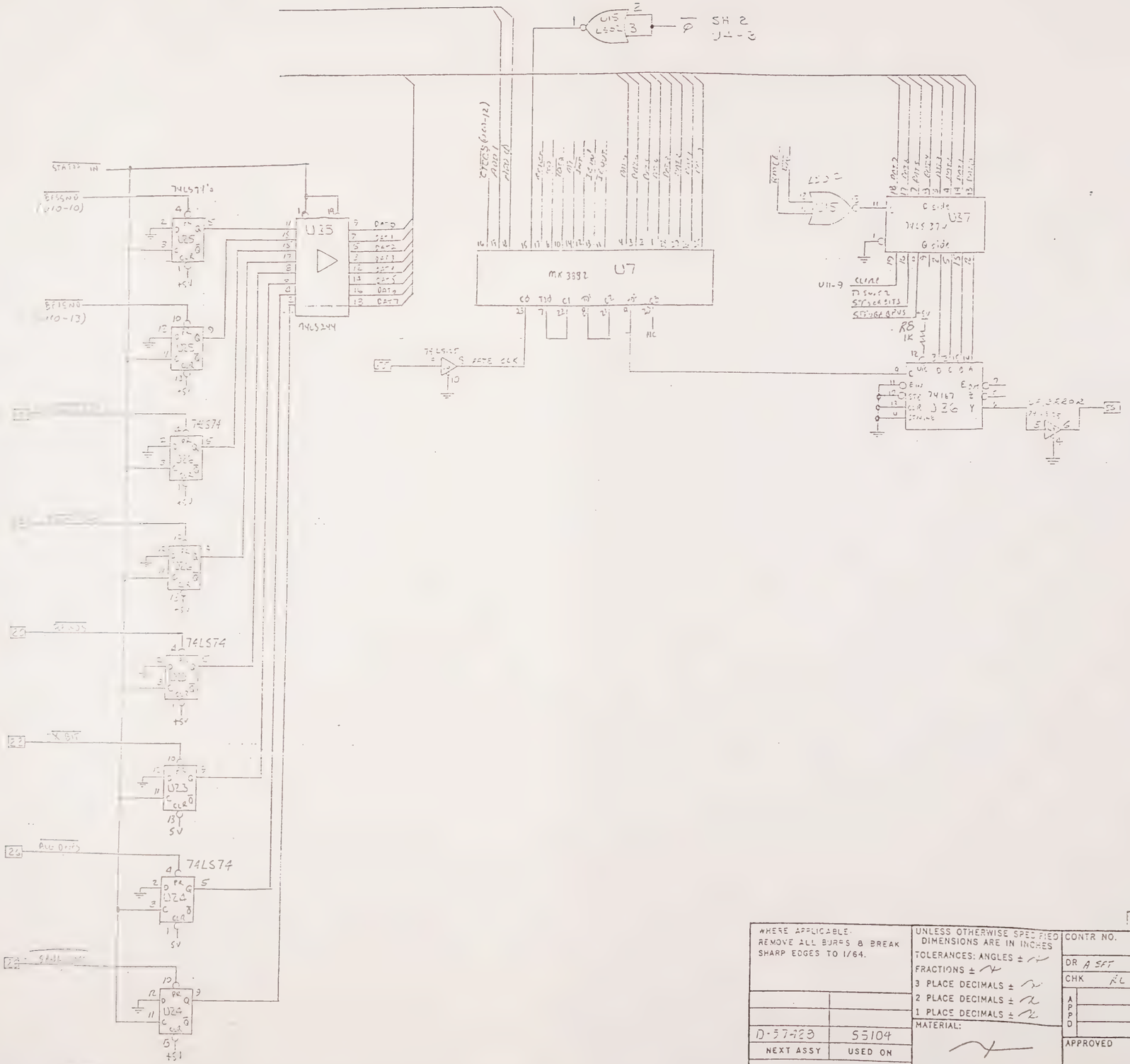
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	C	SEE SHEET 2		



WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	
D-57423	55104
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

REV 1

CONTR NO.

DR A SFT	12-27-82
CHK RC	12-27-82
APPD	

APPROVED

BY DIRECTION OF

tau-tron inc Chelmsford, Mass. 01824

DRAWING TITLE SCHEMATIC
ERROR COUNTER/GENERATOR PCB

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57426	E

SCALE 55104 SHEET 2 OF 3

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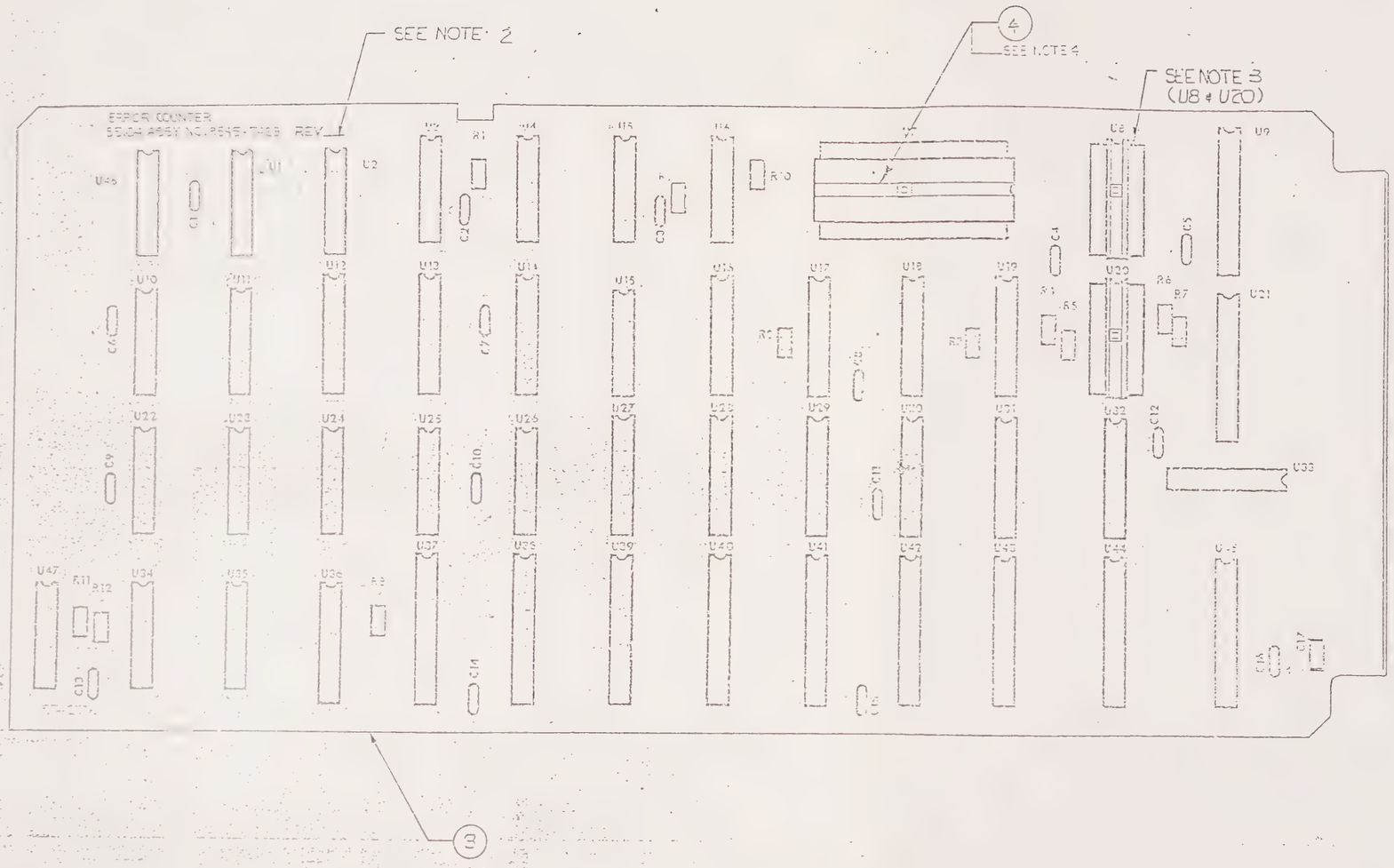
	B	REV PER ECO#01774 EM 3-7-84	3/16/84	RT / TS
	C	REV PER ECO #01960 MLH 8-22-84	9-20-84	RT / TS
	D	UPDATED PER DOC. ACCURACY PROG PER ECO #02173 6/19/85 SH	6/24/85	PK
	E	REV PER ECO# 02272 JMR 11/15/85	11/25/85	PK
	F	REV PER ECO#02405 JMR 3/17/86	3/24/86	PK



1. * DENOTES STATIC SENSITIVE DEVICES.
2. PLACE THE ASSEMBLY PARTS LIST REVISION MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.
3. TO BE PROGRAMED AND INSTALLED BY TEST (U8 & U20).
4. - DENOTES TIEWRAP TO BE INSTALLED AFTER TEST.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	CUSTOMER NO.	tau-tron
TOLERANCES: ANGLES ± 1/2°; FRACTIONS ±; 3 PLACE DECIMALS ±; 2 PLACE DECIMALS ±; 1 PLACE DECIMALS ±	DR BRYANT M BEVERLIE 12-27-82	DRAWING TITLE: ASSEMBLY ERROR COUNTER S5104
MATERIAL	CHK RL 1-27-83	
REMOVE ALL BURRS & BREAK SHARP EDGES TO .015	APP K BEAUPIE 1/27/83	
E-57469 / S5104	APPROVED	SIZE D / CODE IDENT NO. / DRAWING NO. 57428 / REV F
NEXT ASSY / USED ON	BY DIRECTION OF	SCALE 2/1 / S5104 / SHEET 1 OF 1
APPLICATION		

DEC 17 [illegible]

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	1	UPDATED TMM 2-13-85	2/13/85	
	2	UPDATED TMM 10/18/85		
	3	UPDATED TMM 2/19/86	2/21/86	
	4	UPDATED TMM 2/24/86	2/25/86	
	5	UPDATED PER ECN#NP005 MEH 3-14-86	3/14/86	
	A	ECO#02453	5/13/86	
	B	REV PER ECO# 02559 PKD 7/22/86	7/25/86	

VCO TEST POINT → TO SHT 3 (U-27-3)

ERR GEN OUT

DATA BUS

TIT. GENERATOR CLOCK → TO SHT 2,3

TX DS CLOCK → TO SHT 2

X3	X2	X1	FREQ. RANGE
0	0	0	1 - 9.55 Hz
0	0	1	10 - 99.5 Hz
0	1	0	100 - 995 Hz
0	1	1	1K - 9.55 K
1	0	0	10K - 95.5K
1	0	1	100K - 200K

X6	
0	INT MODULATION
1	EXT. MODULATION

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS 1/8 W 5%.
CAPACITANCE VALUES ARE IN MICROFARADS.

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MODULATION GENERATOR & CONTROL CIRCUITRY

LAST USED		UNUSED	
C138		P10, 11	R21, 23
C24		P35, 37	P40, 43
J2		P49, 50	R66
L15		P64, 72	P87, 90
Q4		L2, 6-9	L11
R92		C51, C60	C62, C125
RP7		J1	J2, 3
U43			
VR4			

WHERE APPLICABLE:
REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

D-57901	55104 V4
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± ~
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO.
ORT Cullinane
CHK
APPD
APPROVED
BY DIRECTION OF

tau-tron INC Chelmsford, MA. 01824

DRAWING TITLE
SCHEMATIC
JITTER TRANSMITTER
55104 V4

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57900	B

SCALE ~ | 55104 | SHEET 1 OF 3

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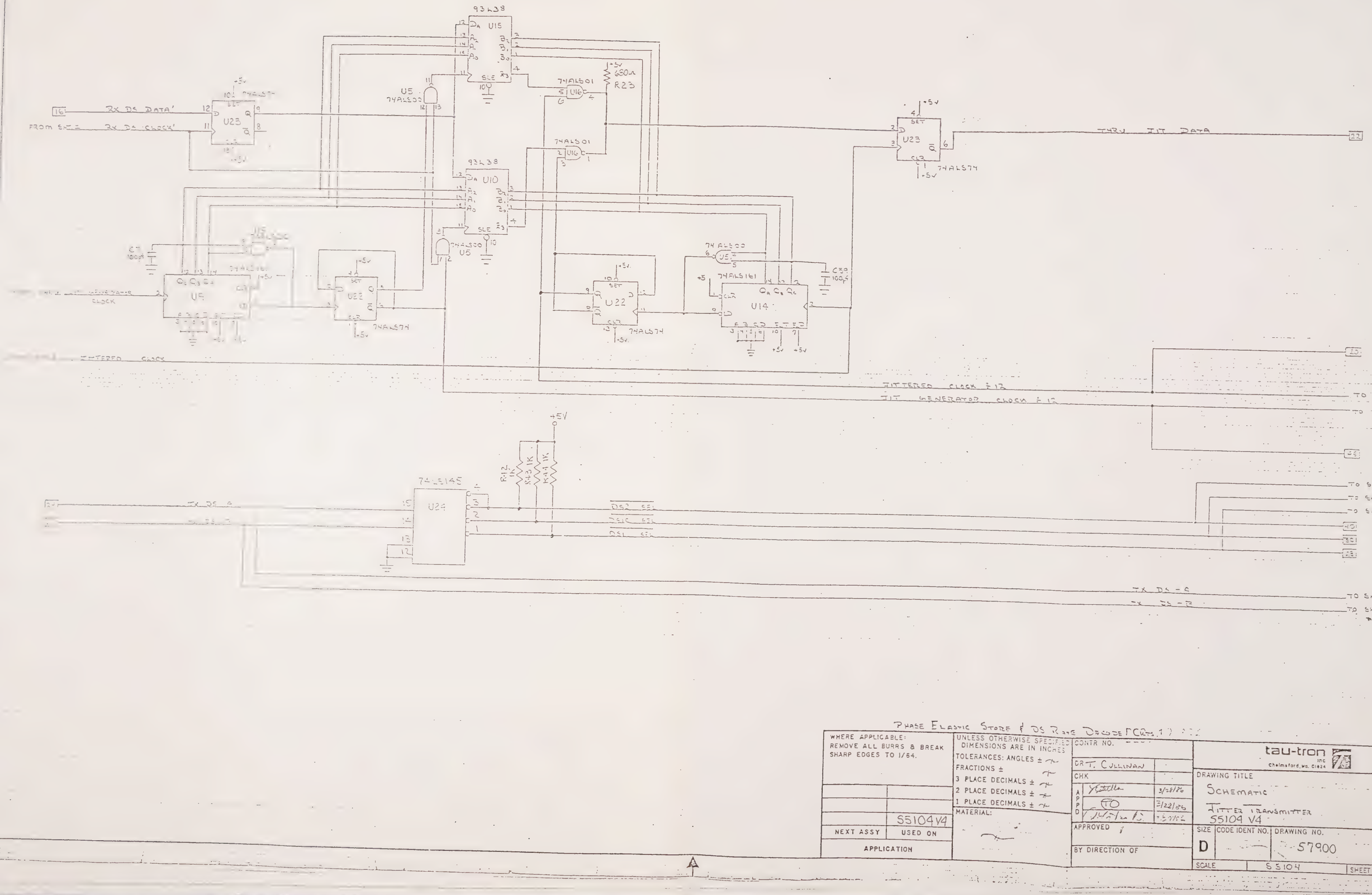
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
SEE SHEET ONE FOR REVISIONS				



PHASE ELASTIC STORE & DS RATE DECODE PCB ASY.

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ± FRACTIONS ± 3 PLACE DECIMALS ± 2 PLACE DECIMALS ± 1 PLACE DECIMALS ±	CONTR NO.	tau-tron inc Chelmsford, Ma. 01824
	MATERIAL:	DR T. CULLINAN	DRAWING TITLE: SCHEMATIC, JITTER TRANSMITTER 55104 V4
55104 V4		CHK	
NEXT ASSY / USED ON		APPD	
APPLICATION		APPROVED	SIZE: D; CODE IDENT NO.; DRAWING NO.: 57900; REV: B
		BY DIRECTION OF	SCALE; 55104; SHEET 2 OF 3

ZONE	LTR	DESCRIPTION	DATE	APPROVED
SEE SHEET ONE FOR REVISIONS				

	(<HZ)
DS1	5
DS1C	10 ± 2.5%
DS2	20 ± 4%

FROM SHT 1 (U29-6) VCO TEST PT

BOTTOM SHIELD BOX

TOP SHIELD BOX

BOTTOM SHIELD BOX

MC10125

X71 JIT MONITOR
0 | LOW FREQ MON.
1 | HIGH FREQ MON.

NOTES: UNLESS OTHERWISE SPECIFIED
1. RESISTORS ARE IN OHMS, ±5%, ⅛ W
2. CAPS ARE IN MICRO FARADS
3. INDUCTORS ARE IN MICRO HENRIES
4. DEFINATION OF GROUND SYMBOLS
   a. LOGIC GROUND
   b. ANALOG GROUND
   c. ANALOG REF GROUND 1
   d. ANALOG REF. GROUND 2
5. DENOTES +70Ω TO -5V.
6. # - DENOTES CAPS C139,135, C60,C77 WILL SELECT VALUES IN TEST.
7. C1 & C2 ADJUST SCREW TERMINAL INDICATED BY ARROW ON BODY CONNECTS TO U31.

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WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO. [illegible]

DR	T. CULLINAN	
CHK		
APPD	[signature]	3/21/84
	[signature]	3/22/84
	[signature]	3/23/84

APPROVED
BY DIRECTION OF

tau-tron INC Chelmsford, Ma. 01824

DRAWING TITLE
SCHEMATIC
JITTER TRANSMITTER
S5104 V4

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57900	B

SCALE | S5104 | SHEET 3 OF 3

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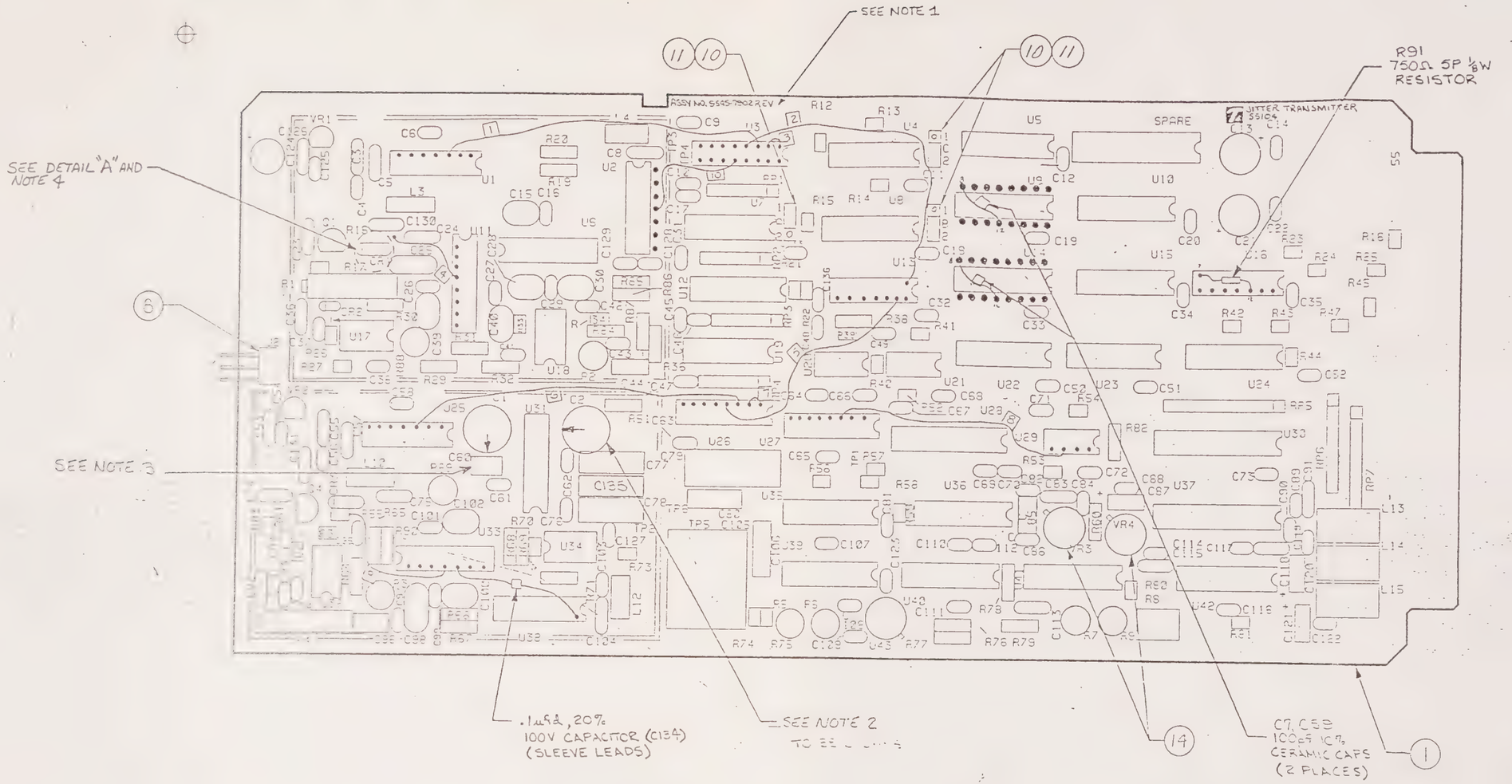
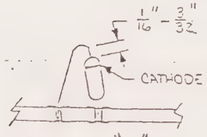
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	4	REVISED AND REDRAWN 3-5-86	3/6/86	PR RJS
	A	ECO # 02453 DRN E6MAY16	5/23/86	RL
	B	REV PER ECO # 02498 MCO 6/9/86	6/9/86	RL CG





DETAIL "A"

NOTES:
1. ENTER THE ASSEMBLY PARTS LIST REVISION LEVEL ON THE ASSEMBLY IN THE DESIGNATED AREA.
2. INSTALL C1 AND C2 WITH BODY ARROW POSITIONED AS SHOWN.
3. INSTALL C60, C77, C135, AND C139 AT TEST, IF REQUIRED. KEEP ALL LEADS SHORT.
4. DIODES CR1 AND CR3 ARE FRAGILE; INSTALL PER DETAIL "A".

	S5104
NEXT ASSY	USED ON
APPLICATION	

WHERE APPLICABLE REMOVE ALL BURRS AND BREAK SHARP EDGES TO 1/64

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ± .010
2 PLACE DECIMALS ± .02
1 PLACE DECIMALS ±

MATERIAL: .06 THK. G10

CONTR NO. [illegible]

DR.	ANTAL	12/85
CHK.	R.L.	1/25/51
APP	T.C.	1/6/87
APP	[illegible]	3/20/86
APP	[illegible]	3/25/86

APPROVED /

BY DIRECTION OF

DEO [illegible] REFERENCE WL-57902

TAU-TRON

DRAWING TITLE
ASSEMBLY DRAWING
JITTER TRANSMITTER BD

SIZE	DRAWING NO.	REV.
D	57902	B

SCALE 2/1 | LS5104 | SHEET 1 OF 2

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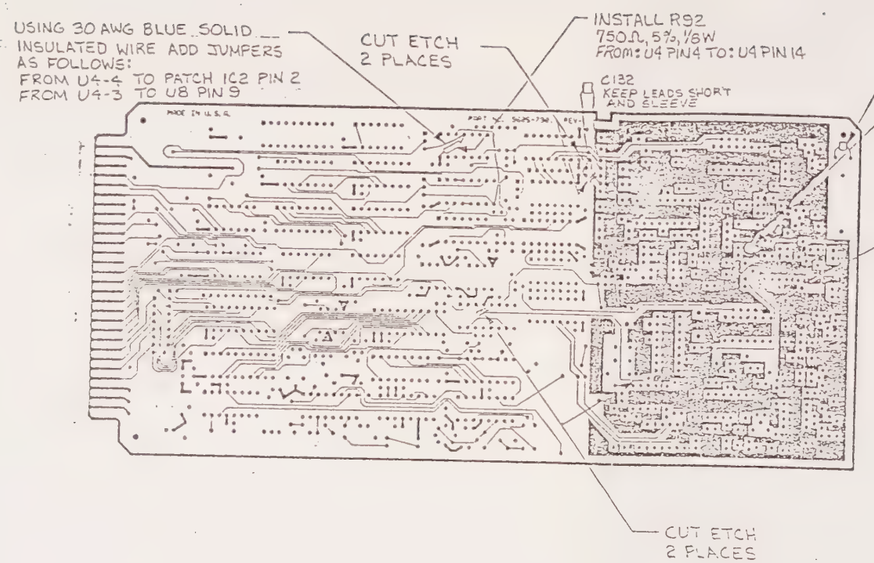
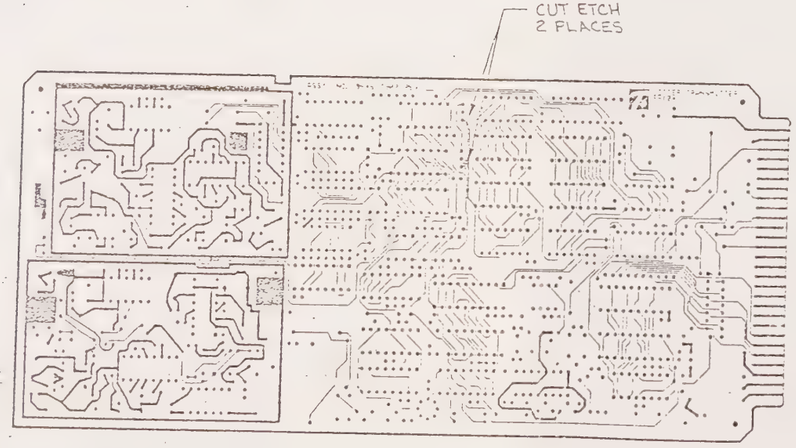
	SEE SHEET 1		


USING 30 AWG BLUE SOLID INSULATED WIRE ADD JUMPERS AS FOLLOWS:
FROM U4-4 TO PATCH IC2 PIN 2
FROM U4-3 TO U8 PIN 9
CUT ETCH 2 PLACES
INSTALL R92 750Ω, 5%, 1/8W FROM: U4 PIN 4 TO: U4 PIN 14
C132 KEEP LEADS SHORT AND SLEEVE
C138
ISOLATE FROM GROUND PLANE WITH A 1/8" DIA. SPOT FACE (R30)
SEE DETAIL "B" AND NOTE 3
CUT ETCH 2 PLACES

DETAIL "B"



DES: T.L. '86

SIZE		DRAWING NO.	REV
D		57902	B
SCALE 1/1	55104	SHEET 2 OF 2	

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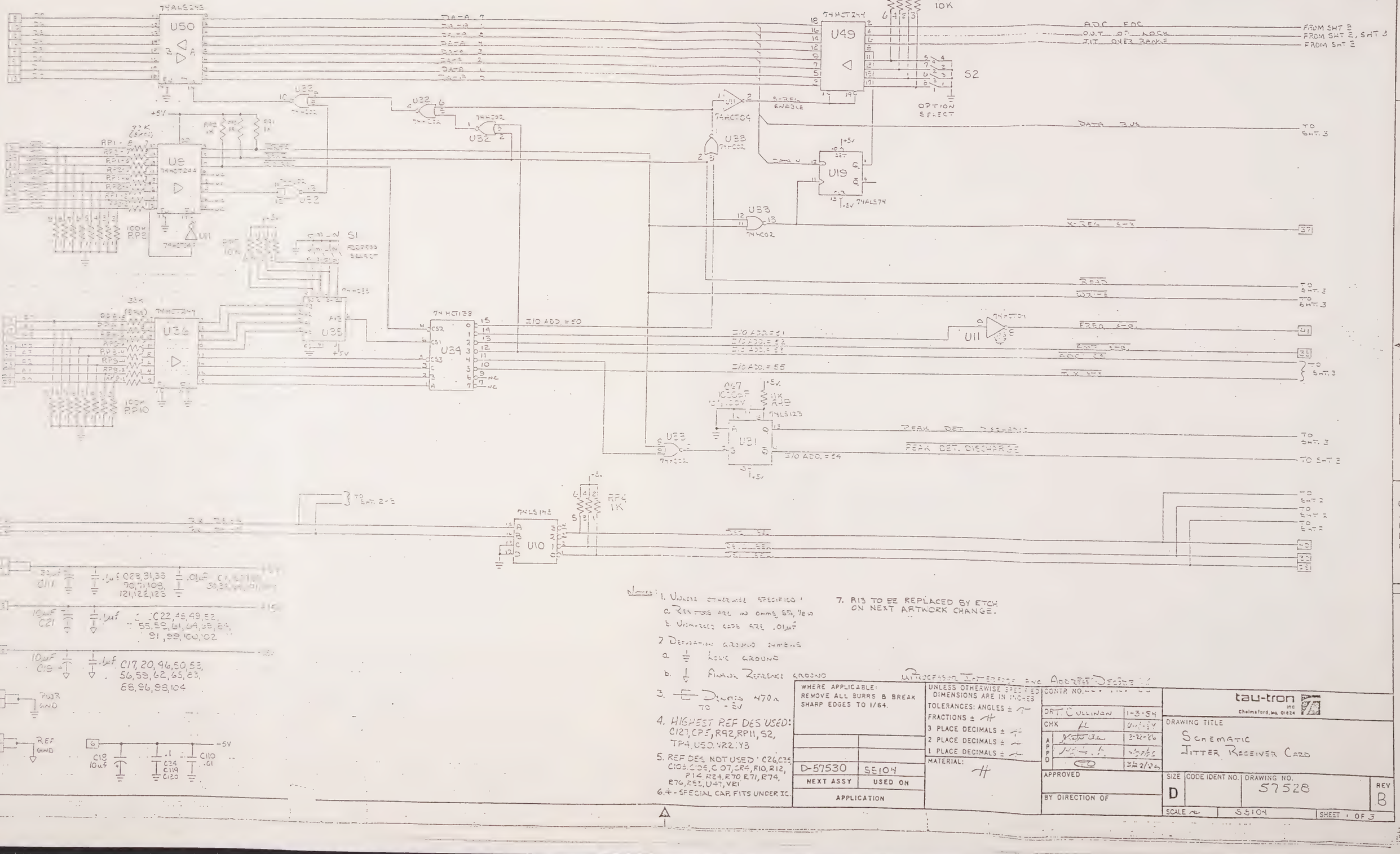
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	1	PROTOTYPE UPDATE TMM 7-23-84	8/4/84	
	2	PROTOTYPE UPDATE PER ECO# 02459 TMM 8SEPT 11	9/21/84	
	3	UPDATED PREIPROD TMM 2-5-85	2-12-85	
	4	UPDATED TMM 7-9-85	10-02-85	
	5	UPDATED TMM 2-20-86	2/21/86	
	6	UPDATED TMM 2-25-86	2/25/86	
	A	ECO# 02459 PER ECO# 03414	5/23/86	
	B	REV PER ECO # 03516 MCO 6/11/86	6/12/86	



Notes:

1. Unless otherwise specified:
   a. Resistors are in ohms, 5%, 1/8 W
   b. Unmarked caps are .01μF
2. Definition ground symbols
   a. ⏚ Logic ground
   b. ⏚ Analog Reference ground
3. Diodes 1N70A TO -5V
4. HIGHEST REF DES USED: C127, CR5, R92, RP11, S2, TP4, U50, VR2, Y3
5. REF DES NOT USED: C26, C35, C103, C105, C107, CR4, R10, R12, P14, R24, R70, R71, R74, R76, R82, U47, VR1
6. ∠ - SPECIAL CAP. FITS UNDER IC.
7. R13 TO BE REPLACED BY ETCH ON NEXT ARTWORK CHANGE.

Microprocessor Interface and Address Decode

D-57530	58104
NEXT ASSY	USED ON
APPLICATION	

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR. NO.	
DRT. C. ULLIVAN	1-3-84
CHK	
APPD	
APPROVED	
BY DIRECTION OF	

tau-tron inc Chelmsford, Ma. 01824

DRAWING TITLE
SCHEMATIC
JITTER RECEIVER CARD

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57528	B
SCALE	58104	SHEET 1 OF 3	

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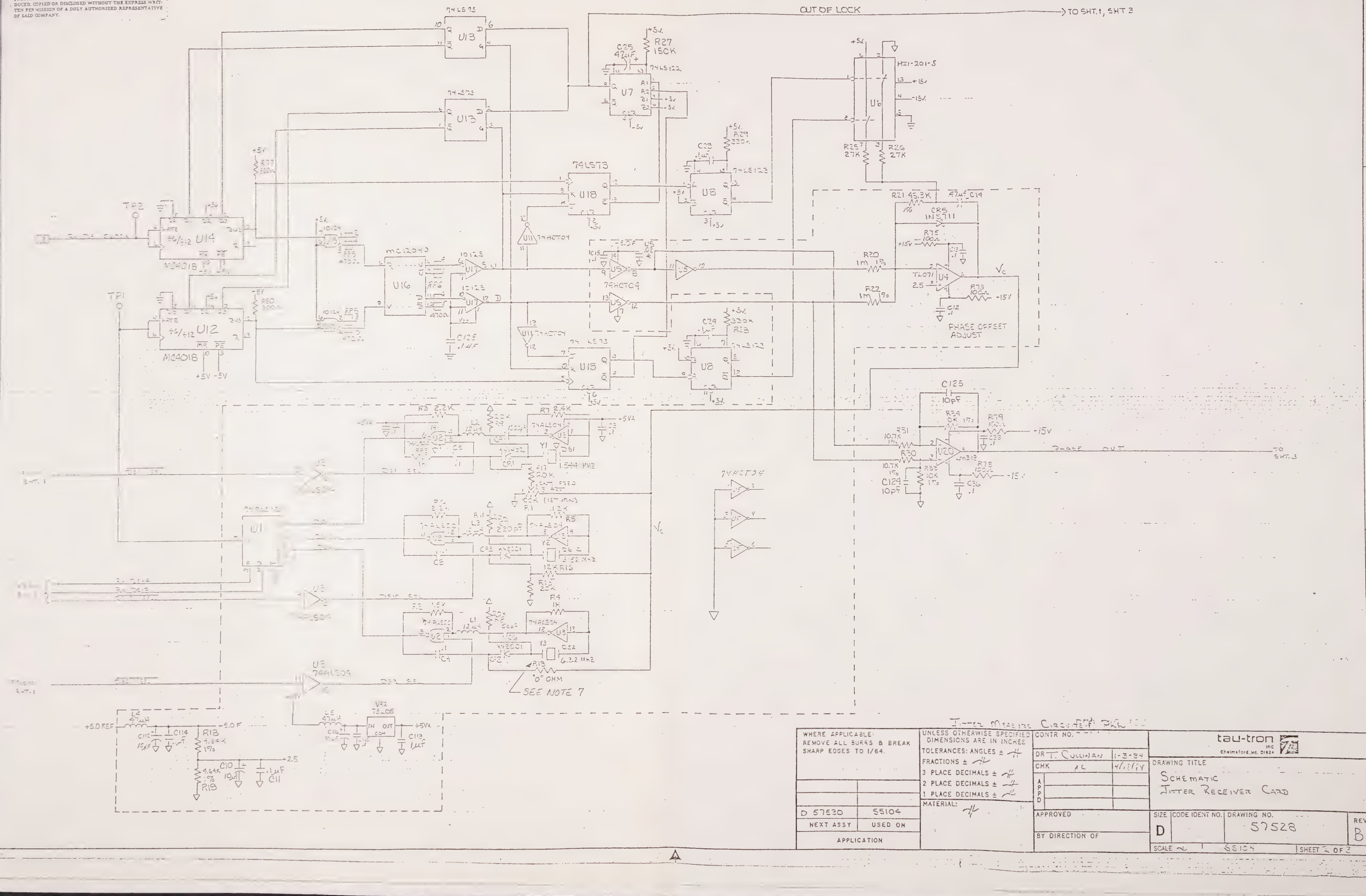
ZONE	LTR	DESCRIPTION	DATE	APPD
		SEE SHEET ONE FOR REVISIONS	——	——



Jitter Measure Circuit Pwb

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ± 1° FRACTIONS ± 1/64 3 PLACE DECIMALS ± .010 2 PLACE DECIMALS ± .03 1 PLACE DECIMALS ± .1 MATERIAL:	CONTR NO.	tau-tron inc Chelmsford, Ma. 01824
D 57530 / 55104		DR T. SULLIVAN 1-3-84	DRAWING TITLE: SCHEMATIC JITTER RECEIVER CARD
NEXT ASSY / USED ON		CHK AL 4/13/84	
APPLICATION		APPD	
		APPROVED	SIZE D / CODE IDENT NO. / DRAWING NO. 57528 / REV B
		BY DIRECTION OF	SCALE 2/1 / 55104 / SHEET 2 OF 2

57528

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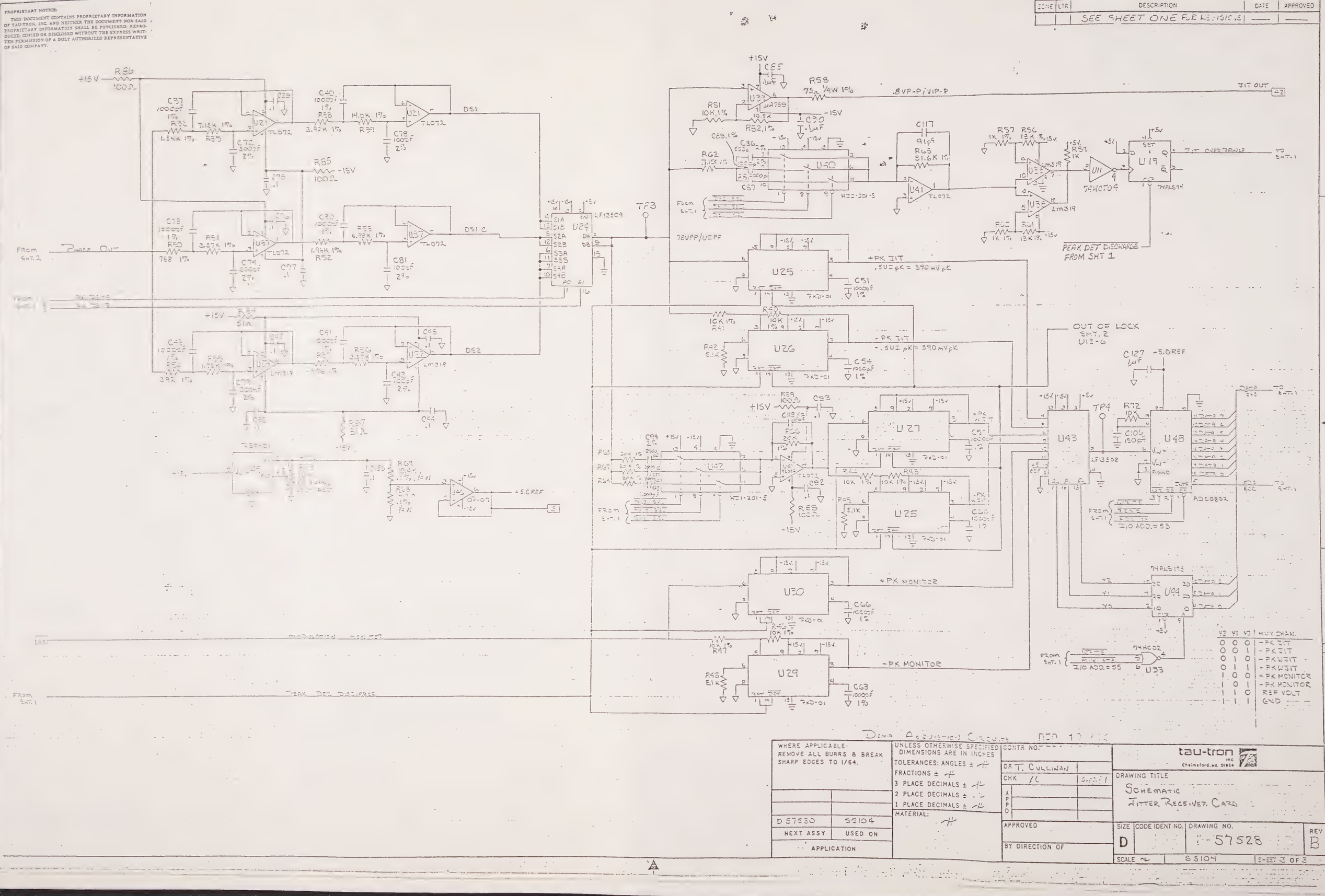
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHEET ONE FOR REVISIONS		



Data Acquisition Circuits DEC 17 XX

D 57530	S5104
NEXT ASSY	USED ON
APPLICATION	

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO.

DR T. CULLINAN
CHK
APPD
APPROVED
BY DIRECTION OF

tau-tron inc
Chelmsford, Ma. 01824

DRAWING TITLE
SCHEMATIC
JITTER RECEIVER CARD

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57528	B

SCALE | S5104 | SHEET 3 OF 3

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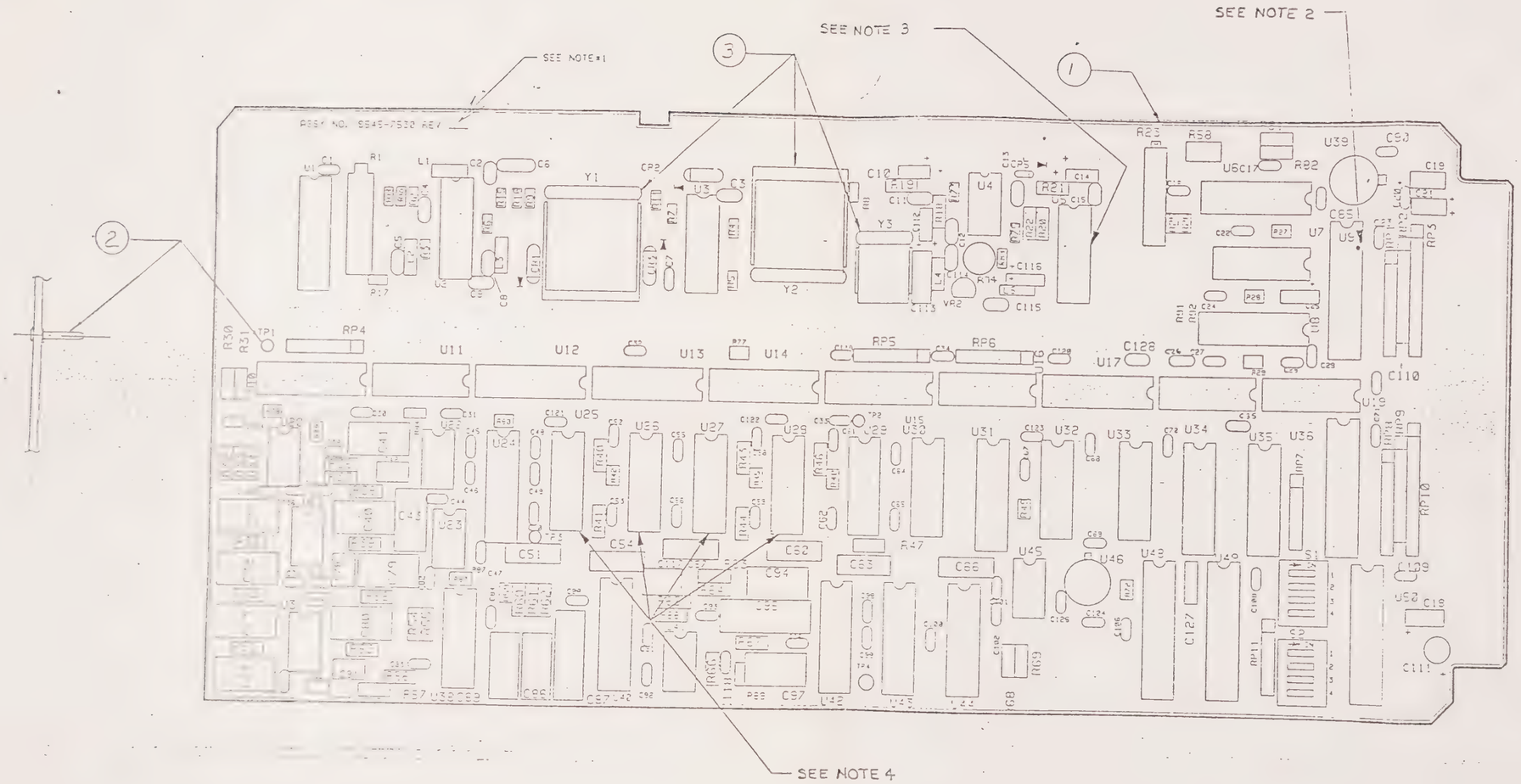
ZONE	REV	DESCRIPTION	DATE	APPROVED
	S	ADDED NOTES 2,3,4. TMM 3-4-86		
	A	ECO#02459 MES 86MAY14		



NOTES:

1. PLACE THE ASSEMBLY PARTS LIST REVISION LEVEL ON THE ASSEMBLY IN THE DESIGNATED AREA.
2. LIFT PIN 19 OF U9 OUT OF HOLE, DO NOT CUT.
3. SPECIAL CAPACITOR TO BE INSTALLED UNDER U5.
4. LIFT PIN 14 FROM OUT OF HOLE ON IC#'S U25, U26, U27, U28. DO NOT CUT.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES-
TOLERANCES ON:
2-PLACE DECIMALS: ±
3-PLACE DECIMALS: ±
ANGLES: ±
FRACTIONS: ±
FINISH
MATERIAL-

SIGNATURES- (DAY/MO./YR.)			
DRAWN	ANTAL	02/06/85	
CHECKED			
ISSUED			
ENGRG		3/28/86	
MFG			

TAU-TRON

JITTER RECEIVER ASSEMBLY DRAWING

SIZE	CODE IDENT NO.	DWG NO.
D		57530

SCALE 2:1 | A02959 | SHEET 1 OF 2 | REV A

ANTAL ASSOCIATES
P.O. BOX 2956 • 95 LOWELL RD. • HUDSON, N.H. 03051 • (603) 882-9112

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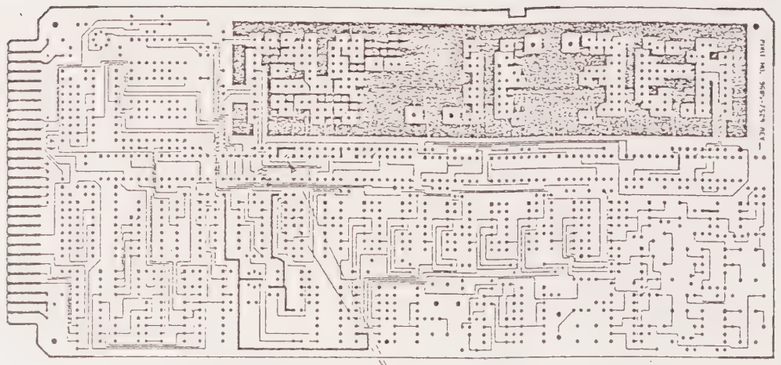
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1		

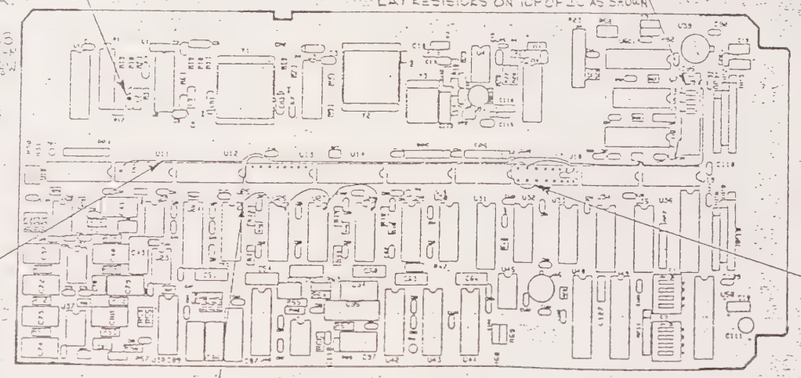


2 ETCH CUTS
U16-12 TO U17-11
U16-3 TO U17-7

CAPACITOR C5 LEAD (INDICATED BY DOT) OUT OF BOARD AND INSTALL 1K OHM 5% 1/8 W R. SEE DETAIL "A".

DETAIL "A"

ADD 1K OHM 5% 1/8W RESISTORS
FROM U9-3 TO U9-20 RS1
FROM U9-5 TO U9-20 RS0
FROM U9-7 TO U9-20 RS2
LAY RESISTORS ON TOP OF IC AS SHOWN



ADD JUMPERS USING 28-30 AWG BLUE SOLID INSULATED WIRE AS FOLLOWS
FROM U11-5 TO U9-8
U11-6 TO U9-19

ADD JUMPERS 30 AWG SOLID INSULATED BLUE WIRE FROM
U13-6 TO U25-14
U25-14 TO U26-14
U26-14 TO U27-14
U27-14 TO U28-14

ADD .1uf CAP FROM U17-1 TO U17-16
(1014-4610E) ADD JUMPERS (INS. 30 AWG)
FROM U17-1 TO U17-7
FROM U17-7 TO U17-11

DEC. 12, 86

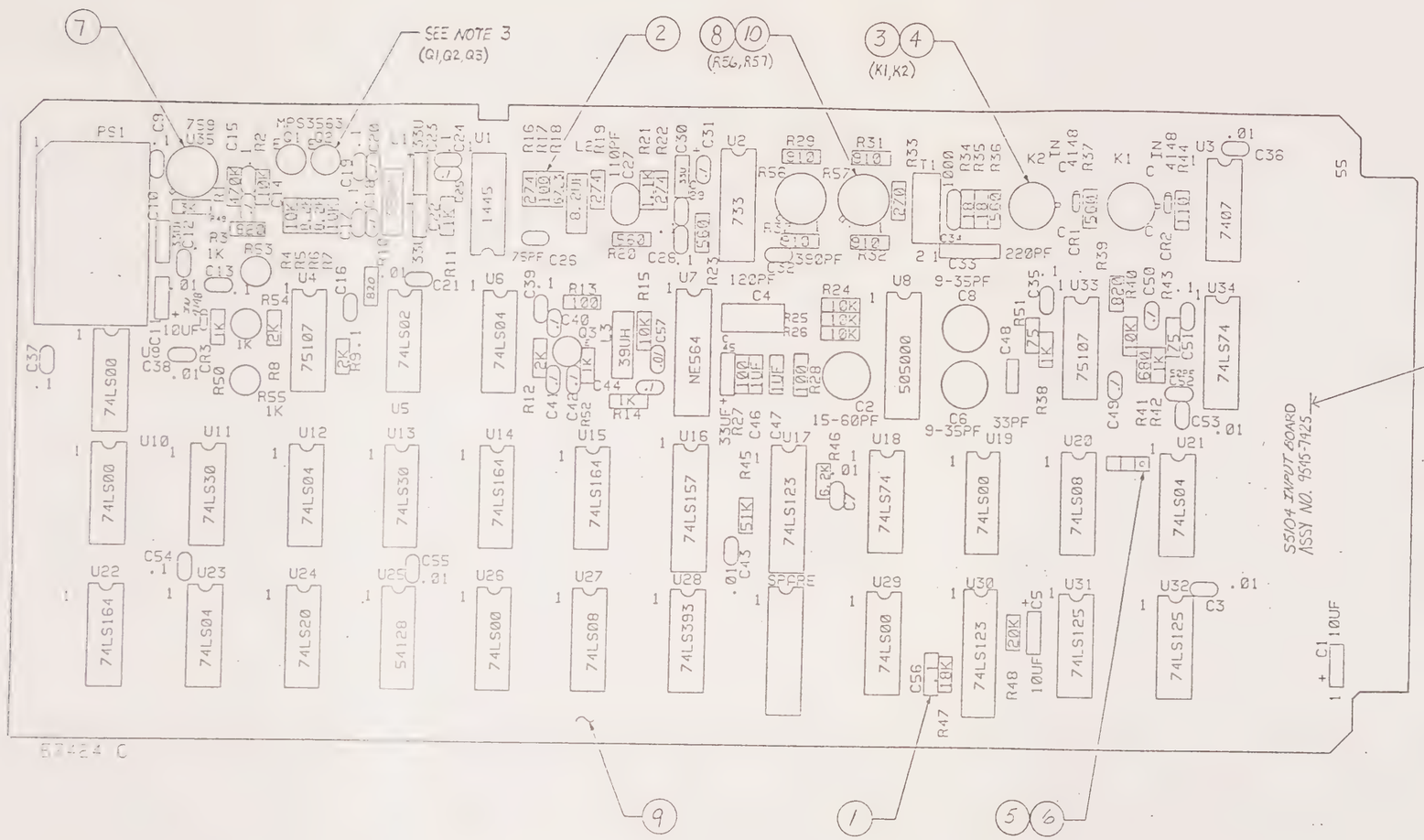
SIZE	DRAWING NO.	REV
D	57530	A
SCALE 1/1	S5104 RX	SHEET 2 OF 2

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REV PER ECO # 01712 J.H	1-13-84	J.S. VH
	B	REV PER ECO #01773 EM	3/26/84	[illegible]
	C	REV PER ECO #01836 MES	[illegible]	[illegible]

GND SHIELD AREA

WHERE APPLICABLE REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ± FRACTIONS ± 3 PLACE DECIMALS ± 2 PLACE DECIMALS ± 1 PLACE DECIMALS ±	CONTR NO.	tau-tron IDC Chelmsford, MA 01824
D-57425 / 5510H	MATERIAL:	DR [illegible] 11/22/82 CHK APPD APPROVED BY DIRECTION OF	DRAWING TITLE: 5510H INPUT BD
NEXT ASSY / USED ON			SIZE D / CODE IDENT NO. / DRAWING NO. D-57423 / REV C
APPLICATION			SCALE 1/1 / SHEET 1 OF 1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	C	REV PER ECO #1836 TMM	6/25/84	



NOTES:

1. UNLESS OTHERWISE SPECIFIED
   A. RESISTANCE VALUES ARE IN OHM'S 1/4W±5%
   B. CAPACITANCE VALUES ARE IN MICROFARADS.
2. PLACE A PERMANENT REVISION LEVEL MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.
3. REFER TO AP-56.
4. SQUARE PAD INDICATES PIN ONE OF MULTILEAD DEVICES.

E-57469	S5104
NEXT ASSY.	USED ON

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
2-PLACE DECIMALS ±
3-PLACE DECIMALS ±
ANGLES ±
FRACTIONS ±
ALL SURF. ✓
MATERIAL-

SIGNATURES	DAY	MO.	YR.
DRAWN ANTAL	22	05	84
CHECKED			
ISSUED			
ENGRG			
MFG			

TAU-TRON

ASSEMBLY DRAWING
S5104 INPUT BD

SIZE	CODE IDENT NO.	DWG NO.
D		D-57425

SCALE 2/1 | WO# 2559 | SHEET 1 OF 1 | REV C

ANTAL ASSOCIATES
P.O. BOX 256•185 LOWELL RD.•HUDSON, N.H. 03051•(603)882-5713

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REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	1	UPDATES (ADDING C59, R58) ECO# 02176	3/1/1	
	2	ADDED R= 75 C34 & ADDING 10K		
	A	DOCUMENT RELEASE ECO# 02176	9/1/75	
	B	REV PER ECO# 02257 TMA 11/8/75	11/11/75	
	C	REV PER ECO# 02438	6/15/76	
	D	REV PER ECO# 02642	10/11/76	

REFERENCE DESIGNATORS			
LAST USED		UNUSED	
C58	T1		
CR3	U36		
K2			
L3			
Q3			
PS1			
R58			

WHERE APPLICABLE REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

57912	55104 V4
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± NL
FRACTIONS ± NL
3 PLACE DECIMALS ± NL
2 PLACE DECIMALS ± NL
1 PLACE DECIMALS ± NL
MATERIAL: N/A

CONTR NO.
DR F. Bonnet 12/12/74
CHK F.L 12/12/74
APPD
APPROVED
BY DIRECTION OF

tau-tron inc Chelmsford, Ma. 01824

DRAWING TITLE
55104 V4
INPUT BD

SIZE	CODE IDENT NO.	DRAWING NO.	RFV
D	71	57910	D

SCALE 1/1 | 55104 | SHEET 1 OF 1

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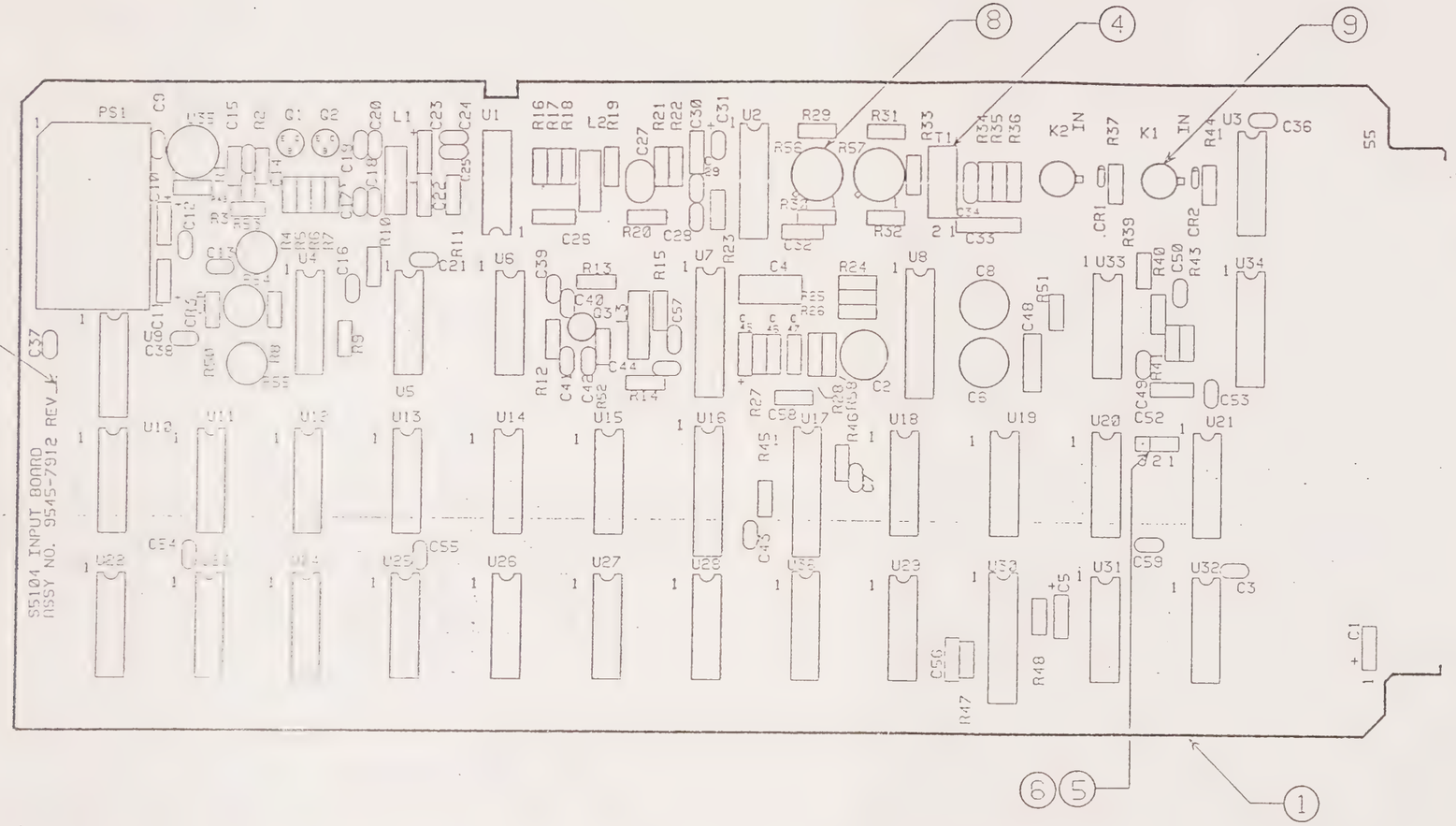
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
	C	REVISIED & REDRAWN PER ECO# 02438 ANTAL APRIL 86	5/5/86	EL GE



NOTES:

1. PLACE THE ASSEMBLY PARTS LIST REVISION MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
2-PLACE DECIMALS ± .01 ALL SURF. ✓
3-PLACE DECIMALS ± .005
ANGLES ± 1°
FRACTIONS ± 1/64

MATERIAL-

SIGNATURES	DAY	MO.	YR.
DRAWN ANTAL	23	04	86
CHECKED			
ISSUED			
ENGRG			
MFG			

TAU-TRON

ASSEMBLY DRAWING
S5104 V4 INPUT BD

SIZE	CODE IDENT NO.	DWG NO.
D		57912

SCALE 2/1 | WO# 3917 | SHEET | REV C

ANTAL ASSOCIATES
P.O. BOX 2364/65 LOWELL RD. HUDSON N.H. 03051 (603)882-9715

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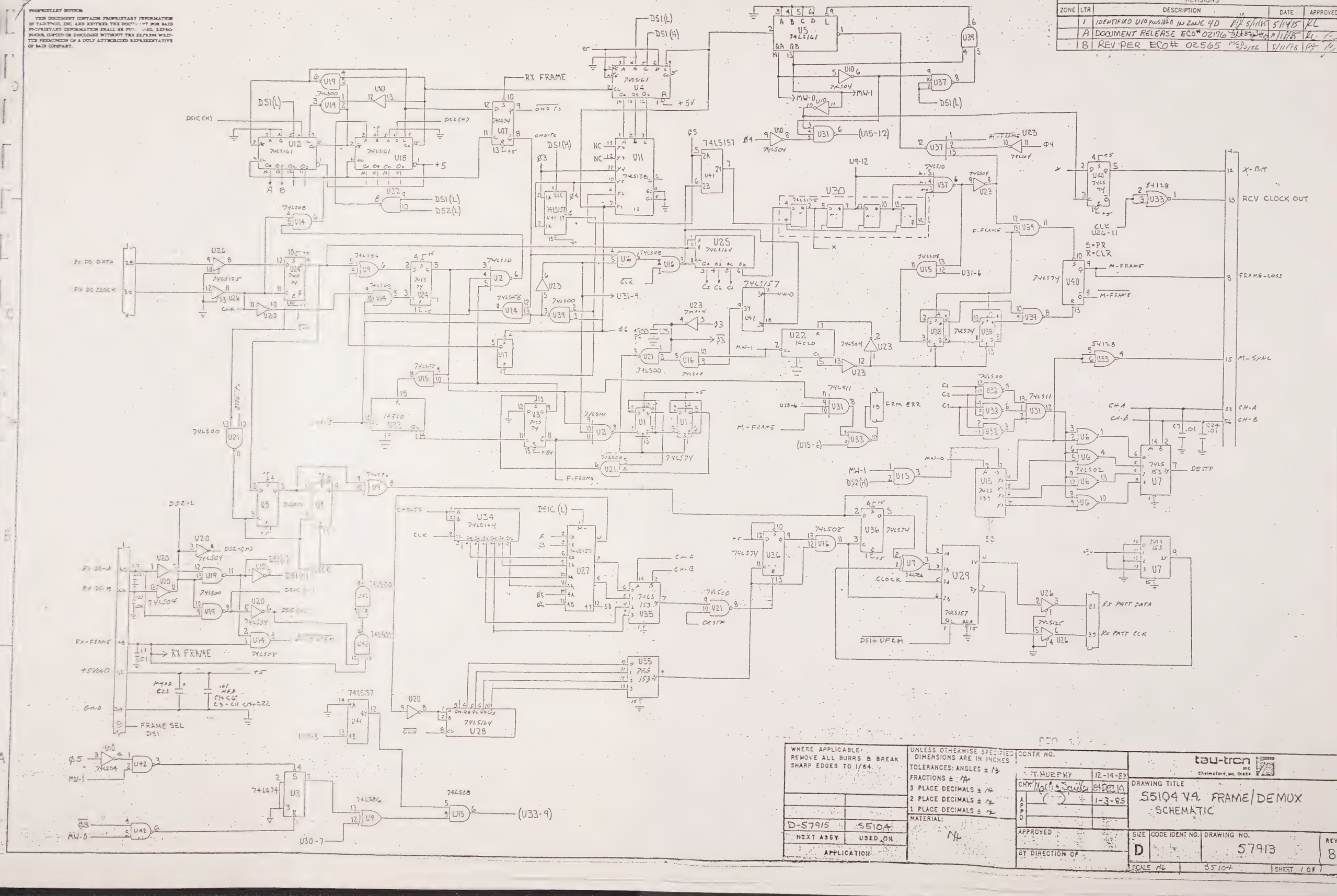
REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	1	IDENTIFIED U10 MISSING IN ZONE 4D	5/11/85	RC
	A	DOCUMENT RELEASE ECO# 02176	5/11/85	RC
	B	REV PER ECO# 02565	5/11/86	RC



WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ± 1° FRACTIONS ± 1/64 3 PLACE DECIMALS ± .010 2 PLACE DECIMALS ± .02 1 PLACE DECIMALS ± .05 MATERIAL: N/A
D-57915 / 55104	
NEXT ASSY	USED ON
APPLICATION	

CONTR NO.		
T. MURPHY	12-14-83	
CHK Hall & Squilla	84 DEC 14	
APPD	1-3-85	
APPROVED		
BY DIRECTION OF		

tau-tron inc
Chelmsford, Mass. 01824

DRAWING TITLE
55104 V.4 FRAME/DEMUX SCHEMATIC

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57913	B
SCALE N/A	55104	SHEET 1 OF 1	

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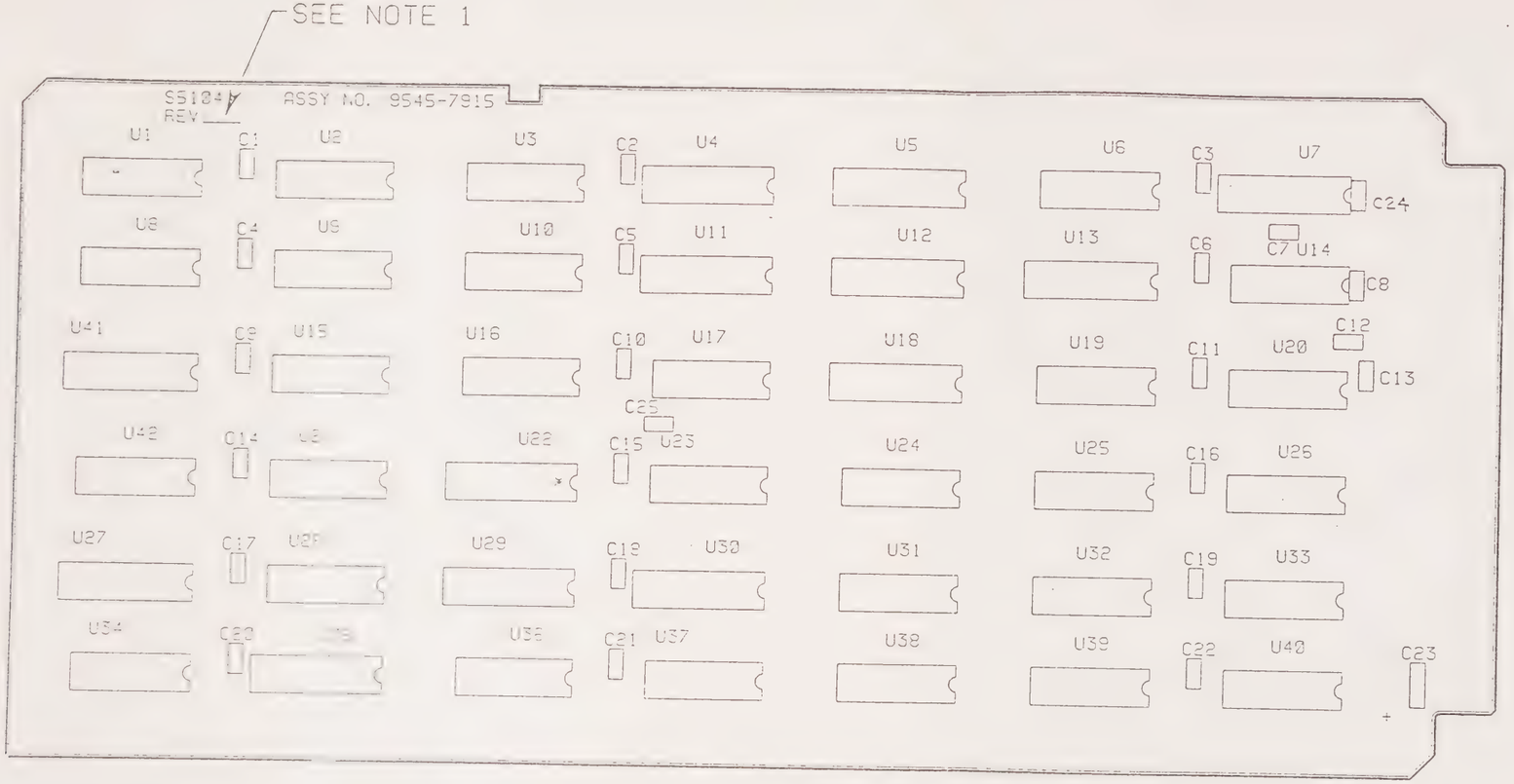
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	DOCUMENT RELEASE ECO#02176	7/25/85	PK 1/2



NOTES:

1. PLACE A PERMANENT REVISION LEVEL MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.
2. * DENOTES STATIC SENSITIVE DEVICE.

WHERE APPLICABLE REMOVE ALL BURRS AND BREAK SHARP EDGES TO 1/64	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ± ½° FRACTIONS ± 1/64 3 PLACE DECIMALS ± .010 2 PLACE DECIMALS ± .02 1 PLACE DECIMALS ± 1/64	CONTR NO.	TAU-TRON
	MATERIAL: SEE PL 9545-7915	DR. ANTAL 12/84 CHK. M. Spindler 8/26/86 APPD	DRAWING TITLE S5104 V4 ASSEMBLY DWG. FRAME/DEMUX
D 57565 / S5104 NEXT ASSY / USED ON APPLICATION		APPROVED BY DIRECTION OF	SIZE D / CODE IDENT NO. 954 / DRAWING NO. 57915 / REV. A SCALE 2/1 / S5104 / SHEET 1 OF 1

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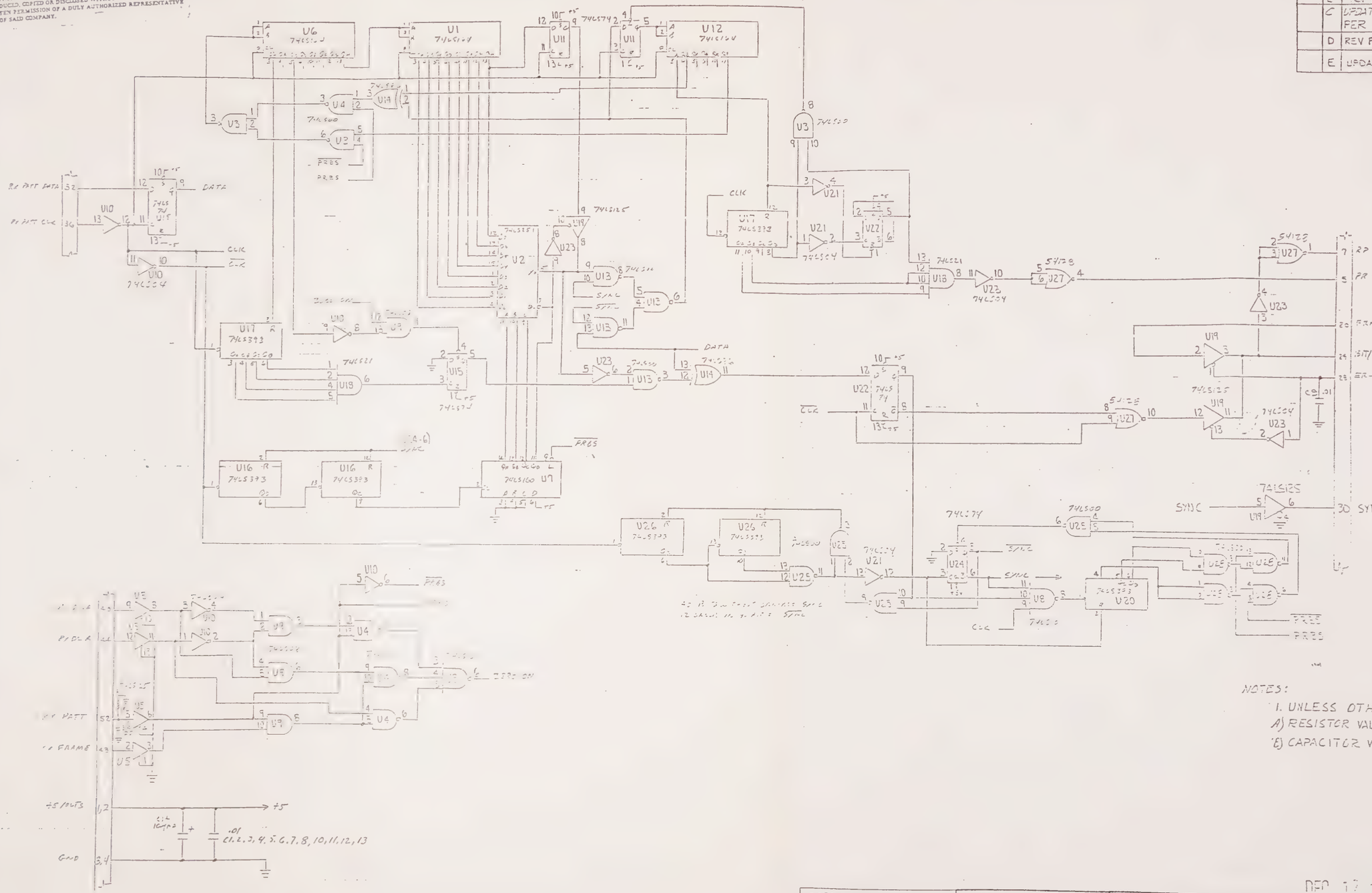
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	1	UPDATED PWB. 4-7-83		
	A	REV PER ECO# 01713 J/J 1-13-84	1-13-84	R.B. VLD
	B	REV PER ECO# 01776 TMM	5/16/84	TT TT
	C	UPDATED PER DOC. ACCURACY PROG PER ECO# 02173 6-19-85 G.H	6/24/85	PR J.
	D	REV PER ECO# 02315 1-6-86 TMM	1/7/86	JL JL
	E	UPDATED PER ECO# 02405 4-22-86 MAJ	4/25/86	JL JL



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
A) RESISTOR VALUES ARE IN OHMS, 1/8W ±5%
B) CAPACITOR VALUES ARE IN MICROFARADS.

REFERENCE DESIGNATORS	
LAST USED	UNUSED
C15	
R1	
U28	

WHERE APPLICABLE:
REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

D-57419	55104
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO.

DR	
CHK	
APPD	
APPROVED	
BY DIRECTION OF	

tau-tron inc
Chelmsford, ma. 01824

DRAWING TITLE
55104 PATTERN SYNC

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D	-	57417	E

SCALE 7X | 55104 | SHEET 1 OF 1

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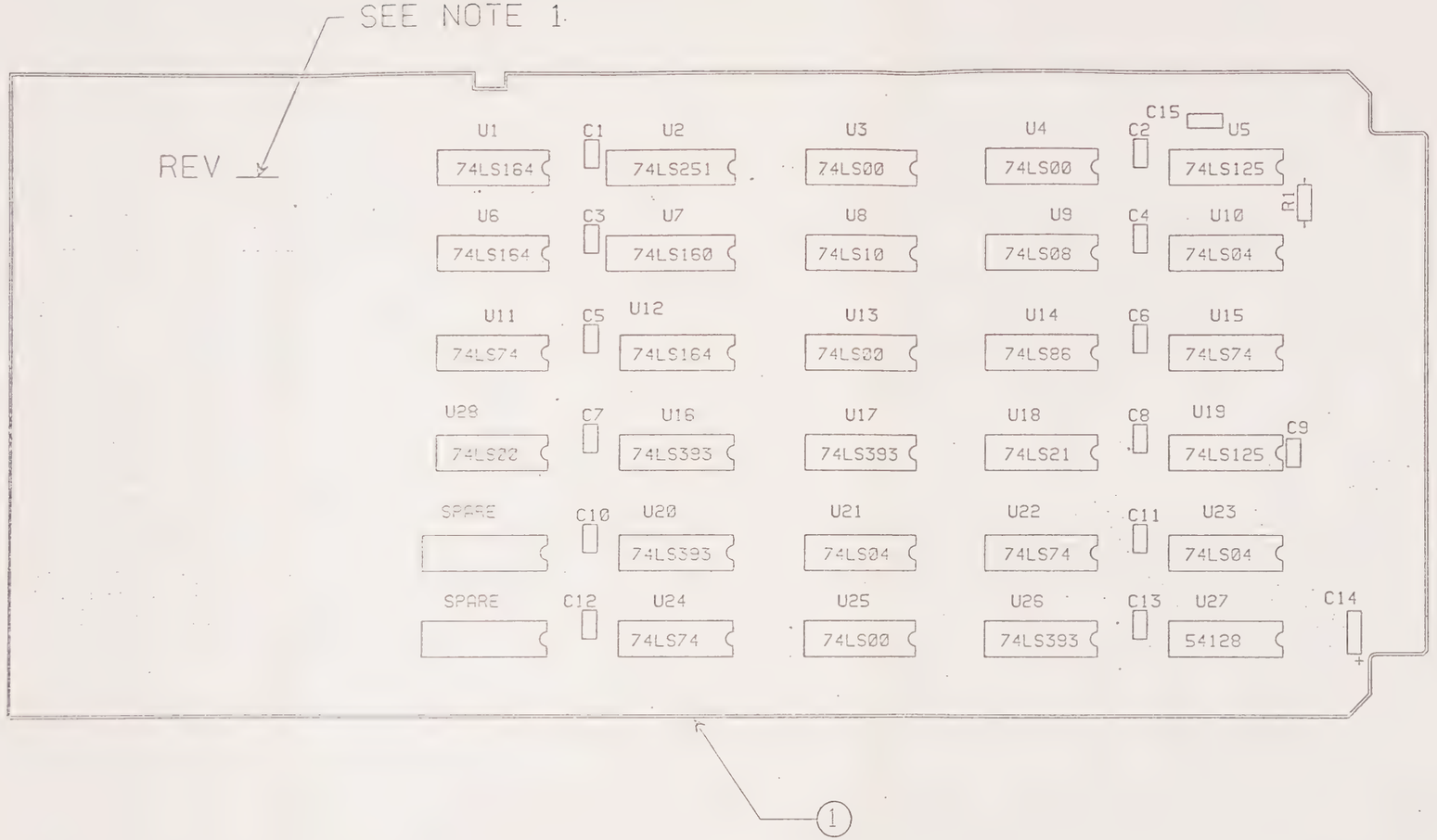
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B	REV PER ECO 01776		
	C	UPDATED PER DOC. ACCURACY PROG PER ECO# 02173 6-16-85		
	D	REV PER ECO 02405	4/86	



NOTES:

1. PLACE THE ASSEMBLY PARTS LIST REVISION MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.

WHERE APPLICABLE REMOVE ALL BURRS AND BREAK SHARP EDGES TO 1/64

S5104

NEXT ASSY | USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ± .010
2 PLACE DECIMALS ± .02
1 PLACE DECIMALS ±

MATERIAL:

CONTR NO.

DR. ANTAL 4/86

CHK.

APPD

APPROVED

BY DIRECTION OF

TAU-TRON

DRAWING TITLE

ASSEMBLY DWG.
PATTERN SYNC

SIZE	CODE IDENT NO.	DRAWING NO.	REV.
D		57419	D

SCALE 2/1 | S5104 | SHEET 1 OF 1

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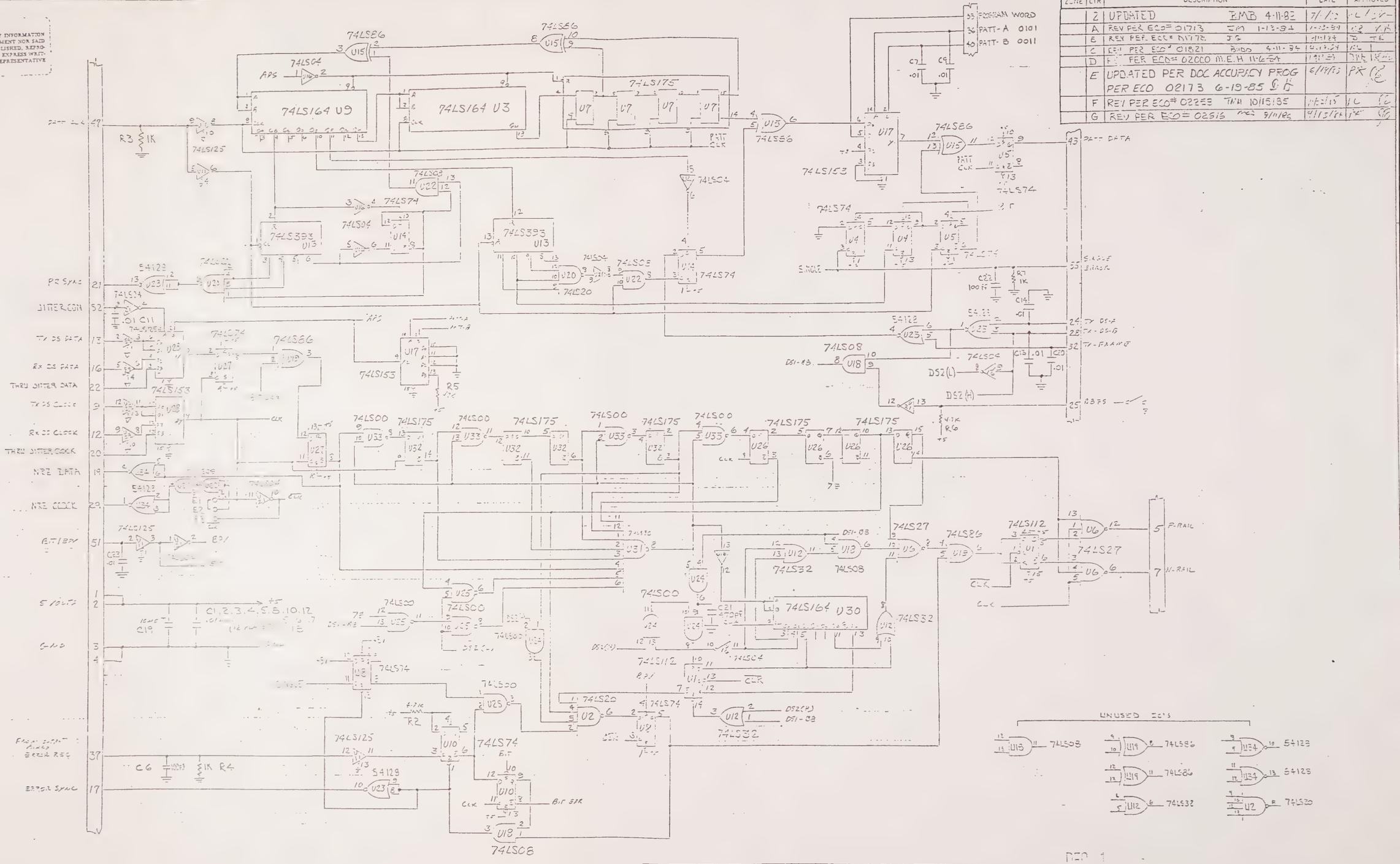
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	Z	UPDATED EMB 4-11-82	7/1/82	
	A	REV PER ECO# 01713 TM 1-13-83	1-13-83	
	B	REV PER ECO# 01778 JS	4-11-84	
	C	REV PER ECO# 01821 BJDD 4-11-84	4-11-84	
	D	REV PER ECO# 02000 M.E.H 11-6-84	11-8-84	
	E	UPDATED PER DOC ACCURACY PROG PER ECO 02173 6-19-85	6/19/85	
	F	REV PER ECO# 02283 TMH 10/15/85	10/15/85	
	G	REV PER ECO# 02516 MCS 5/11/86	5/13/86	



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
A) RESISTANCE VALUES ARE IN OHMS, ±5%, ¼ W.
B) CAPACITANCE VALUES ARE IN MICROFARADS.

REF DESIGNATIONS			
LAST USED		UNUSED	
C23		P.1	
R7		C6	
U34		U7,29	

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

D-57416	S5104
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO.

DR C. Bob Hale	9/24/82
CHK [illegible]	11-8-82
APPD K. Brennan	11/8/82

APPROVED
BY DIRECTION OF

tau-tron inc
Chelmsford, Ma. 01824

DRAWING TITLE
S5104 PATTERN GENERATOR BIPOLAR ENCODER

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D	[illegible]	57414	G

SCALE ~ | S5104 | SHEET 1 OF 1

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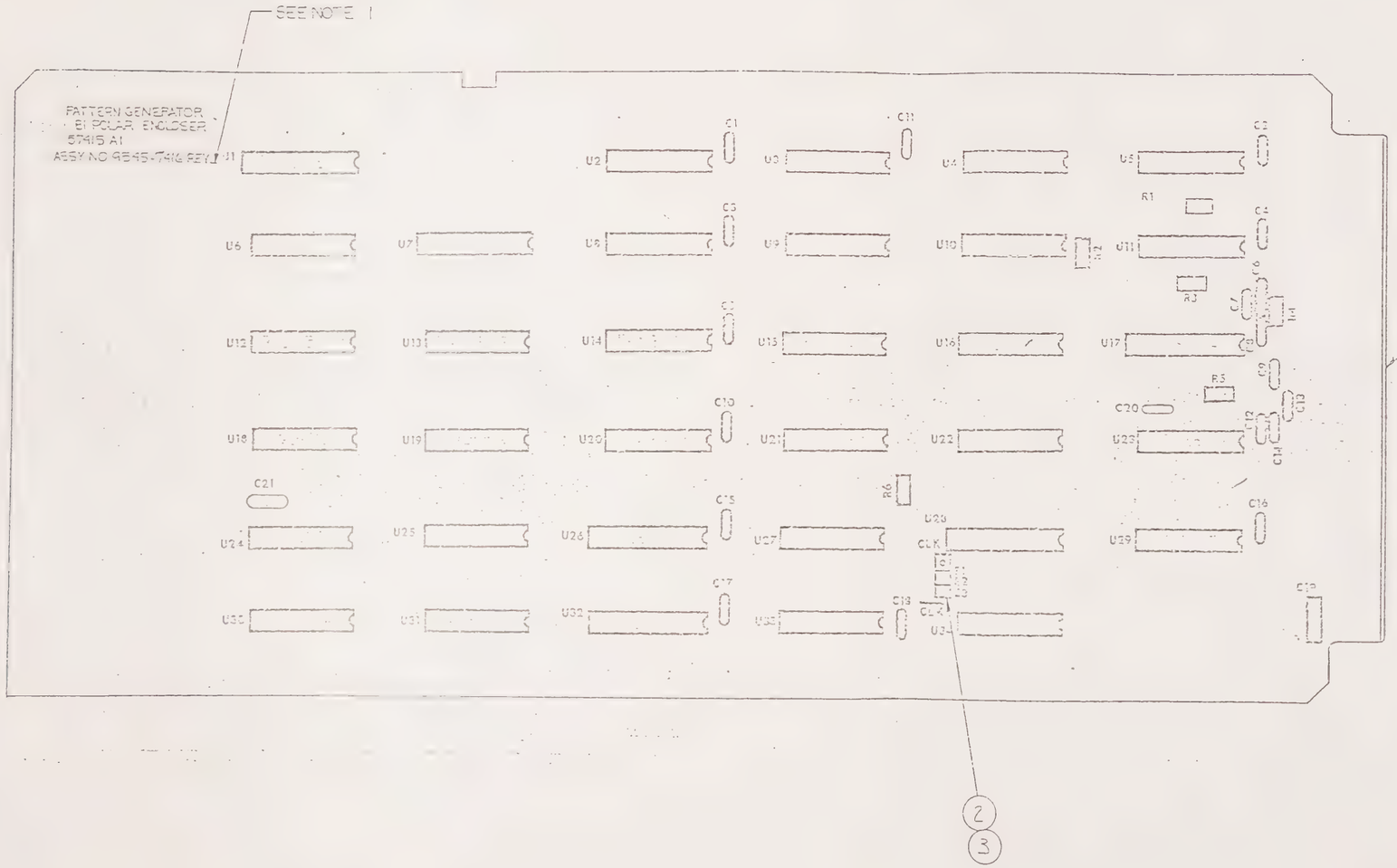
B	REV PER ECO.# 01778	3/14/84	EE	
C	REV PER ECO # 01821 BUDD 4-11-84	4/19/84	RL	
D	REV PER ECO # 02000 M.E.H 11-7-84	11-21-84	RL	
E	REV PER ECO # 02034 [illegible] 85 JANIS	1/16/85	RL	
F	UPDATED PER DOC. ACCURACY PROG PER ECO #02173 6/13/85	6/24/85	PX	



NOTES:

1. PLACE A PERMANENT REVISION LEVEL MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.

WHERE APPLICABLE REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ± FRACTIONS ± 3 PLACE DECIMALS ± 2 PLACE DECIMALS ± 1 PLACE DECIMALS ± MATERIAL	DRAWN: DEBRYANT BEVERLIE; CHK'D: K BEAUPRE; APPROVED:	TAU-TRON INC. ASSEMBLY PATTERN GENERATOR BI-POLAR ENCODER
E-57469 S5104			SIZE D 954 DRAWING NO. 57416 REV F.
NEXT ASSY USED ON			SCALE 2/1 S5104 SHEET 1 OF 1
APPLICATION			

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REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	1	ADDED UPDATED REF. DES & PIN #'S	11-15-85	
	2	CHG'D U31 F:LS08 TO LS00	2/19/86	KL
	A	ECO#02440 5/1/86	5/1/86	KL
	B	REV PER ECO# 02566 MCD 8/11/86	9/11/86	
	C	REV PER ECO # 02623 MCD 9/11/86	9/11/86	
	D	REV PER ECO# 02625 MCD 9/12/86	9/14/86	

NOTES:
1. UNLESS OTHERWISE SPECIFIED: RESISTORS ARE 1/4 W 5%.
CAPACITANCE VALUES ARE IN MICROFARADS.

REF DES (LAST USED / NOT USED)
C24
CR2
R8
RP3
Q1
U38
Y3

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

NEXT ASSY	USED ON
APPLICATION	55104

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO:

DR T. MURPHY	9-23-85
CHK Paul L.	11/21/85
APPD	11/20/85
	3/31/86
	2-25-86

APPROVED
BY DIRECTION OF

tau-tron A UNIT OF GENERAL SIGNAL

DRAWING TITLE: SCHEMATIC MULTIPLEXER CONTROL

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57936	D

SCALE — | 55104 | SHEET 1 OF 1

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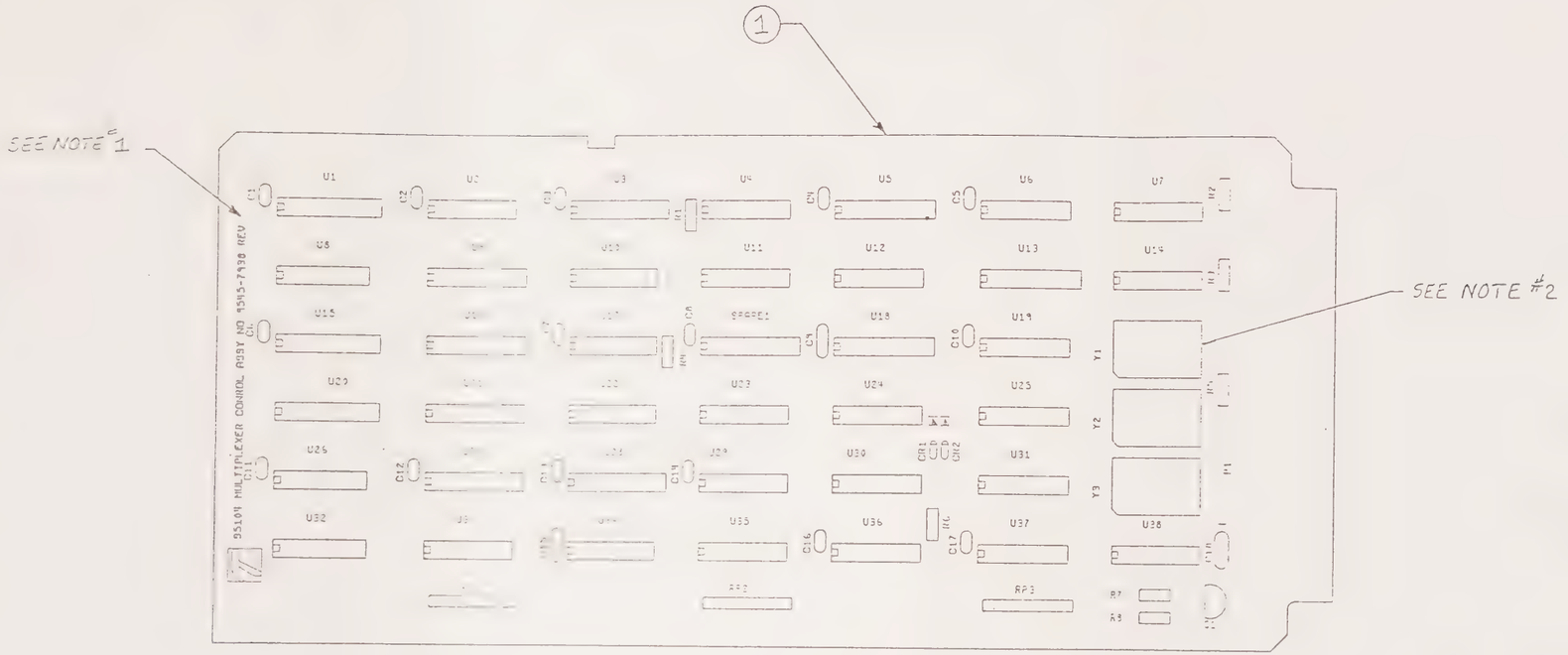
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	1	CHGD U31; NOTE 1 ECO #02440	2/14/86	RL
	A	ECO #02440	5/1/86	RL



NOTES:

1. PLACE THE ASSEMBLY PARTS LIST REVISION MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.
2. INSTALL SPECIAL CAPACITORS Y1, Y2 &Y3 UNDER CRYSTAL OSCILLATORS.

WHERE APPLICABLE REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64	
	55104
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± ~~
FRACTIONS ± ~~
3 PLACE DECIMALS ± ~~
2 PLACE DECIMALS ± ~~
1 PLACE DECIMALS ± ~~
MATERIAL:

CONTR NO.

DR	R.J. GUTHRIE	11/11/85
CHK	R.L.	11/25/85
APPD	(T.C.)	2-23-86

APPROVED
BY DIRECTION OF

tau-tron A unit of GENERAL SIGNAL

DRAWING TITLE 55104 MULTIPLEXER CONTROL PCB ASSY

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57938	A

SCALE ~~ | 55104 | SHEET 1 OF 1

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REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	1	UPDATED ORIGINAL 3055 2 NOV 82		
	2	UPDATED PROTOTYPE 3055 22 APR 83		
	A	REV PER ECO # 01713 TM 1-13-84	1-13-84	KB KB
	B	REV PER ECO 01775	3-6-84	JWB JE
	C	REV PER ECO # 01919 ~~11/2~~ 8 MAY 84	8-8-84	JE JE
	D	REV PER ECO # 02009 M.E.H. 11-30-84	12-6-84	MH
	E	REV PER ECO # 02115 MH 5-23-85	5/31/85	JE JE
	F	UPDATED PER DOC ACCURACY PROG PER ECO # 02173 6-19-85	6/19/85	PR
	G	REV PER ECO # 02539 MCO 7/19/86	7/16/86	PR PR
	H	REV PER ECO # 02574 MCO 8/11/86	8/12/86	PR PR
	J	REV PER ECO # 02617 MCO 9/10/86	9/11/86	PR PR

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
A) RESISTOR VALUES ARE IN OHMS ¼ WATTS ±5%.
B) CAPACITOR VALUES ARE IN MICROFARADS.

REFERENCE DES.

LAST USED		UNUSED	
R16	Y3	R 11	
C24		C 14	
CR2			
Q1			
U35			

D-57413 | 55104
NEXT ASSY | USED ON
APPLICATION

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO.
DR K. Brennan 9/14/82
CHK [illegible] 11-2-82
APPD K. Brennan 11/5/82
APPROVED
BY DIRECTION OF

tau-tron inc Chelmsford, Ma. 01824

DRAWING TITLE SCHEMATIC
MULTIPLEXER CONTROL

SIZE D | CODE IDENT NO. | DRAWING NO. 57411 | REV J
SCALE | 55104 | SHEET 1 OF 1

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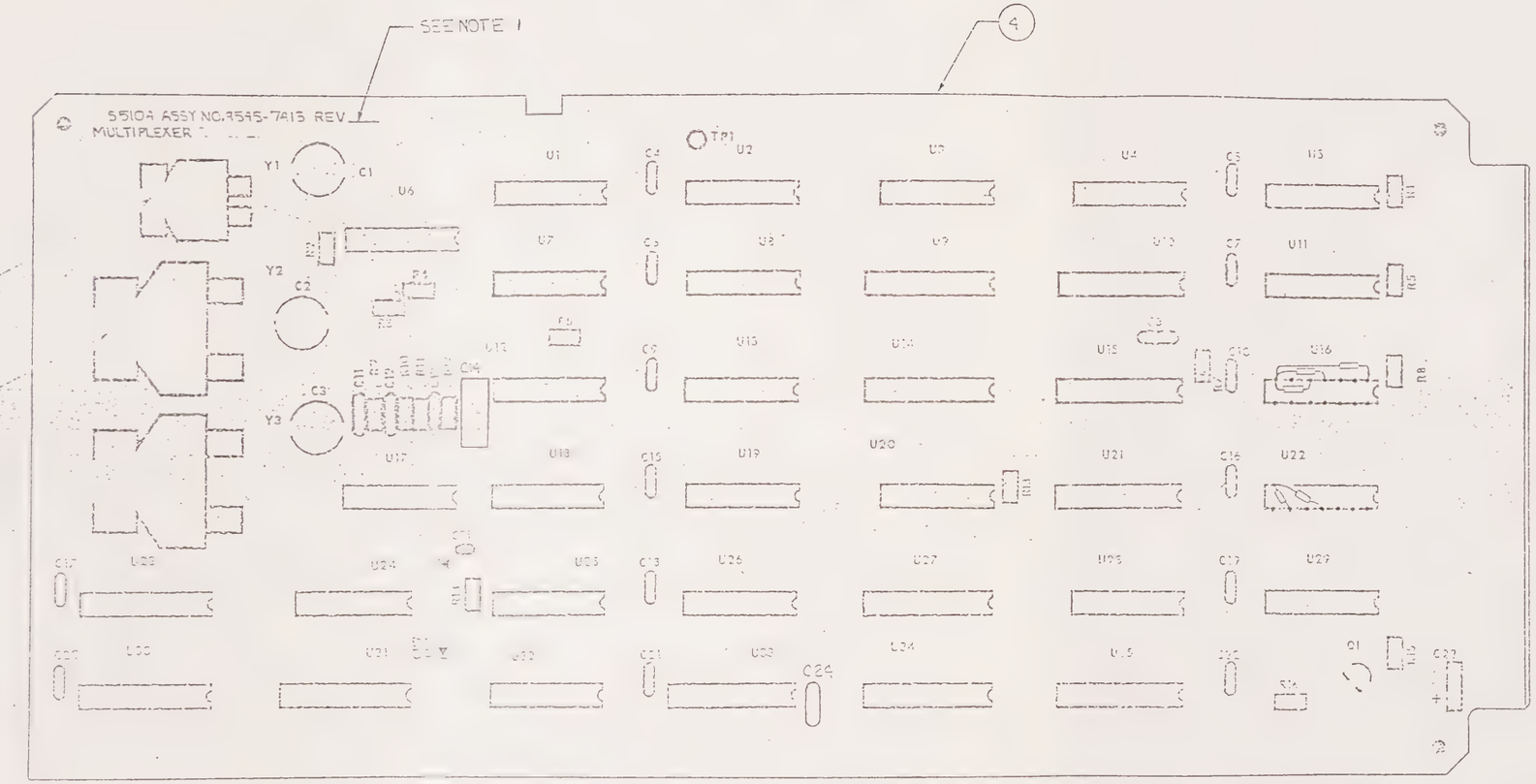
	B	REV PER ECO # 01775 EM 13-8-84		WB JE
	C	REV PER ECO # 01914 DWB 8-9-84	8-9-84	JE 11/12
	D	REV PER ECO # 02115 DWB 5-23-85	5/31/85	EM 11/12
	E	UPDATED PER DOC ACCURACY PROG PER ECO 02173 6-19-85 DK	6/19/85	DK JE
	F	REV PER ECO # 02538 MCD 7/10/86	7/10/86	JE JE



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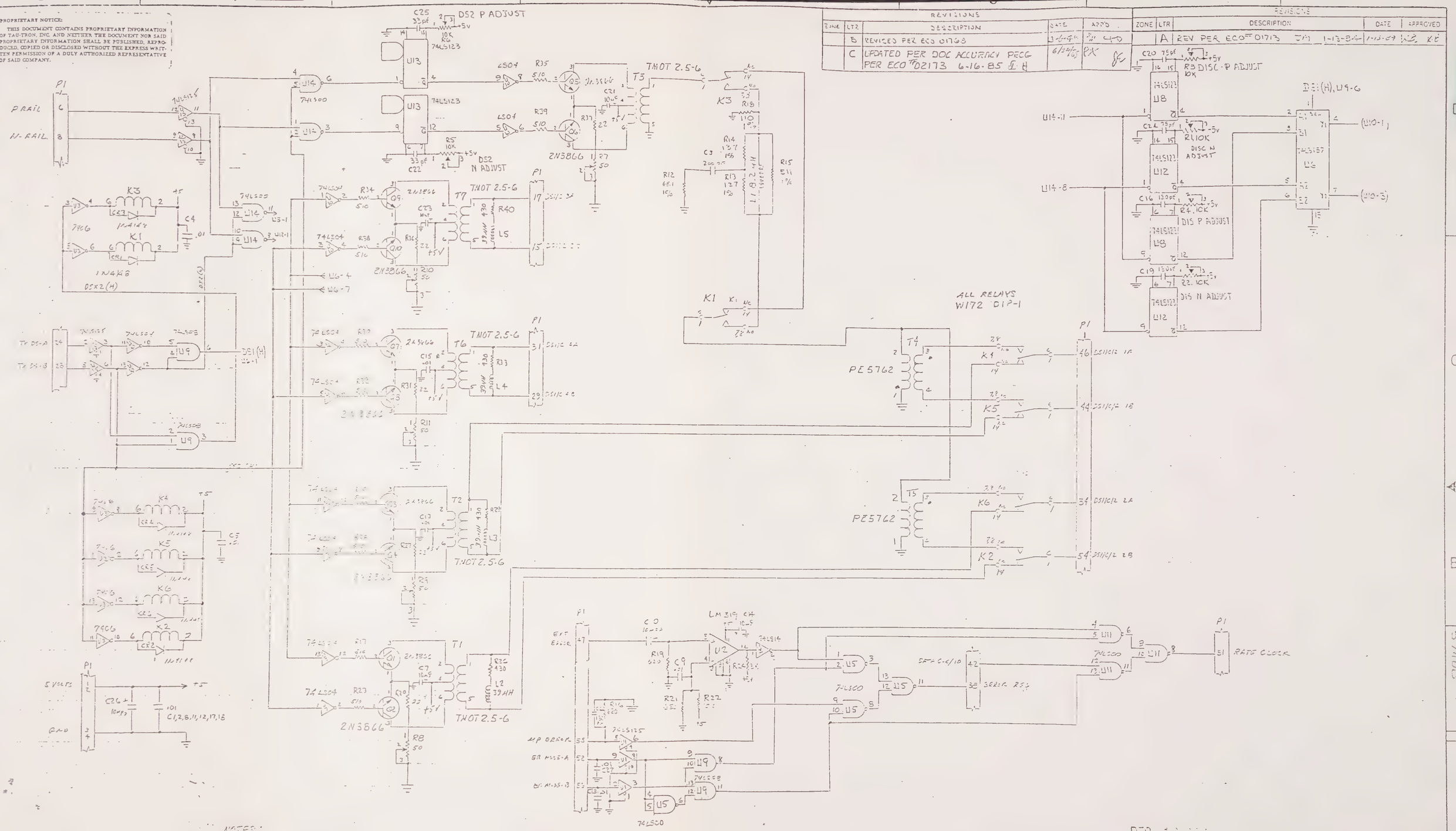
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D
	B	REVISED PER ECO 01768	3-4-84	
	C	UPDATED PER DOC ACCURACY PECG PER ECO # 02173 6-16-85 E H	6/26/85	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REV PER ECO # 01713 JM	1-13-84	1-13-84 KE



NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   A) RESISTANCE VALUES ARE IN OHMS, ±5%, 1/4 W.
   B) CAPACITANCE VALUES ARE IN MICROFARADS.

WHERE APPLICABLE. REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES: ANGLES ± FRACTIONS ± 3 PLACE DECIMALS ± 2 PLACE DECIMALS ± 1 PLACE DECIMALS ± MATERIAL:
D-57410 / S5104	
NEXT ASSY / USED ON	
APPLICATION	

CONTR NO.

DR K. BEAUPRE	10/12/82
CHK K. L.	1-17-83
APPD K. P.	1/25/83
APPROVED	
BY DIRECTION OF	

tau-tron INC Chelmsford, Mass. 01824

DRAWING TITLE: S5104 OUTPUT BIPOLAR INTERFACE

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57408	C

SCALE | S5104 | SHEET 1 OF 1

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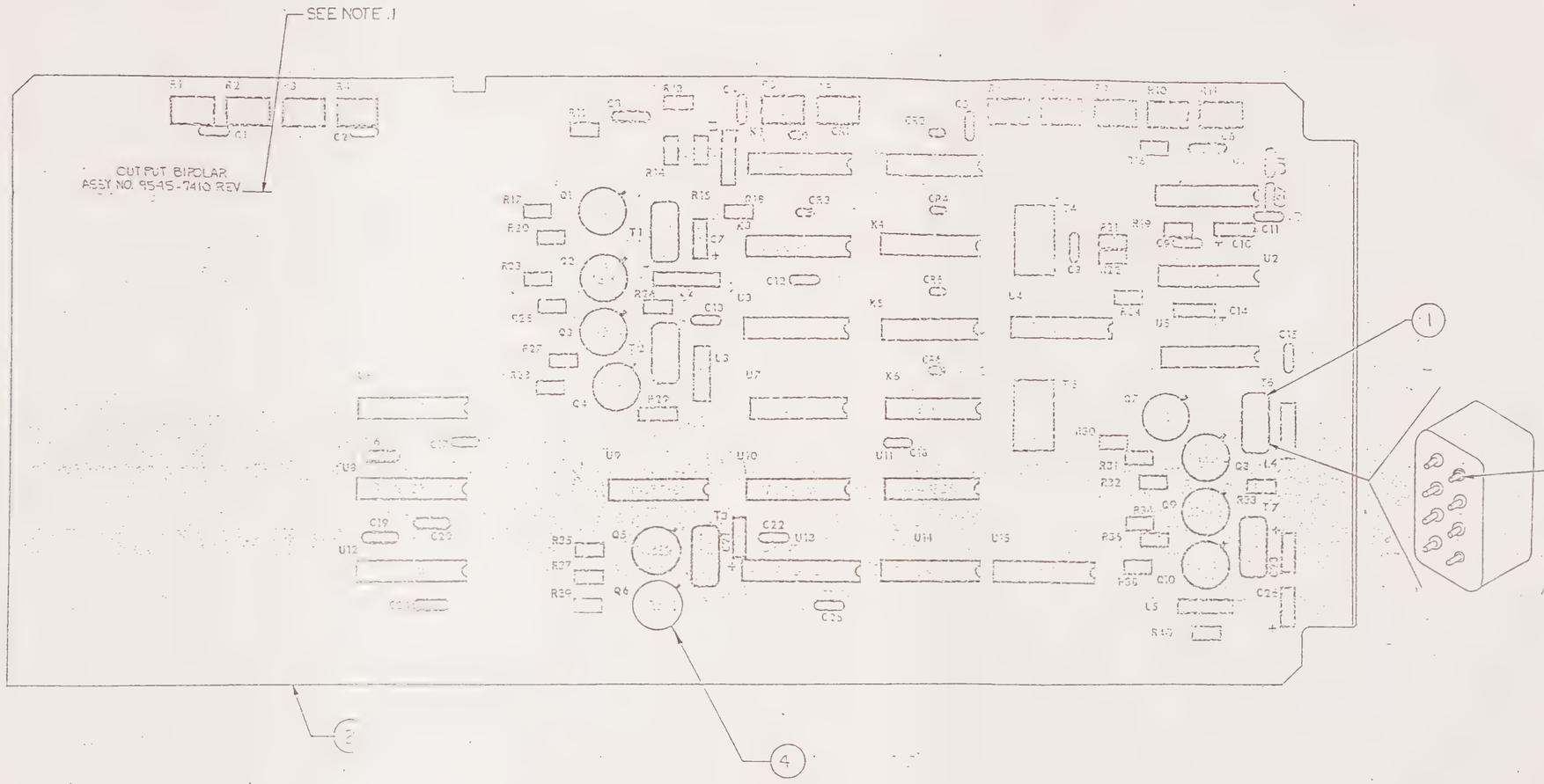
B	REV PER ECO. # 01768	EM 3-2-84	3-6-84	BZ	
C	REV PER ECO # 01819	RJSS 4-11-84	4-19-84	RL	
D	REV PER ECO# 01969 M.E.H 9/14/84		10-2-84	L	HE
E	UPDATED PER DOC ACCURACY PROG PER ECO 02173 6/19/85 DH		6/24/85	DH	



NOTES:

1. PLACE A PERMANENT REVISION LEVEL MARK ON THE ASSEMBLY IN THE DESIGNATED AREAS.

BYPRINT M.BERLIN	1-26-83	
R.L	1-26-83	
K BEAUPRE	1-27-83	

E-57409 | S5104
NEXT ASSY | USED ON
APPLICATION

TAU-TRON INC.

ASSEMBLY
OUTPUT BIPOLAR P.C.B.
S5104

954 | 57410 | E

2/1 | S5104 | 1 OF 1

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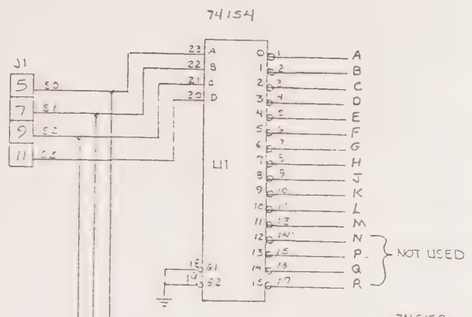
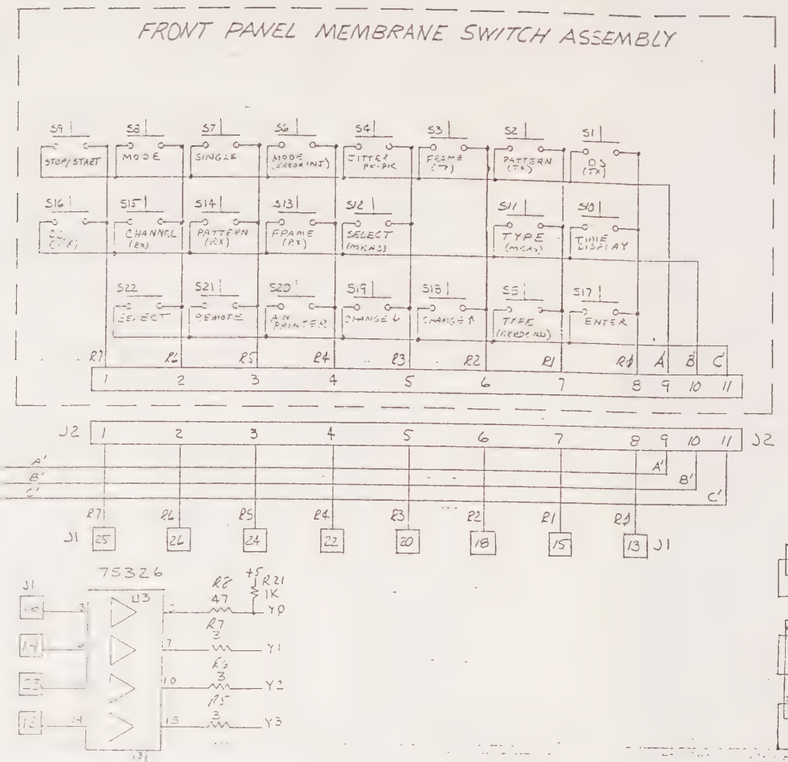
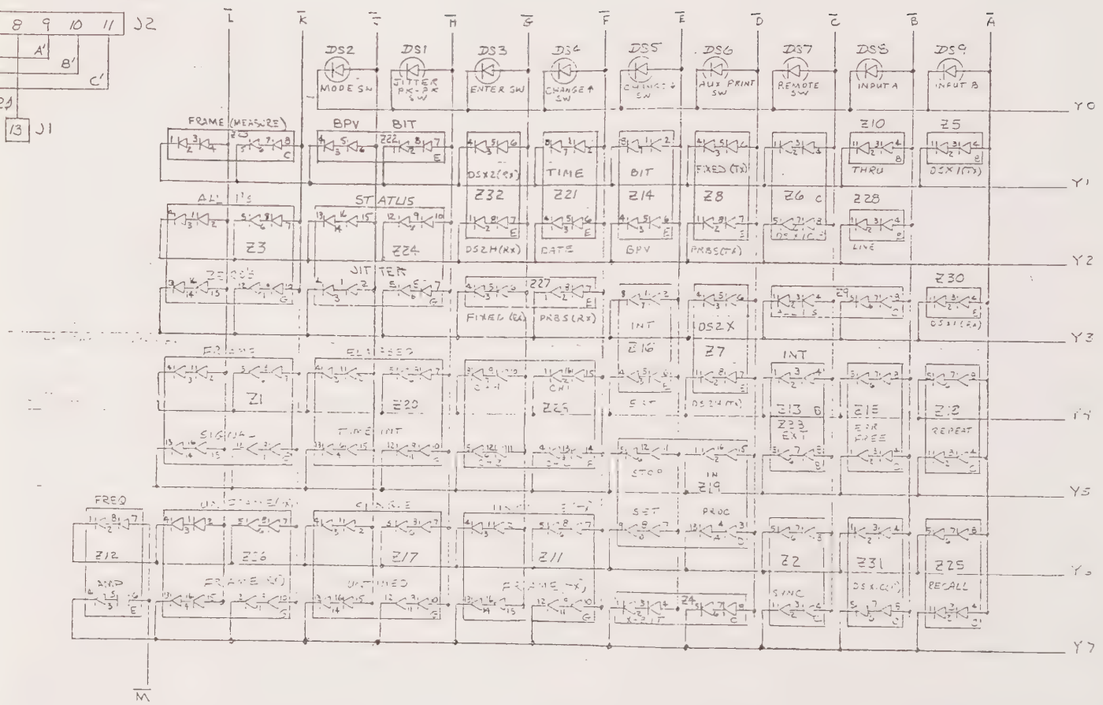
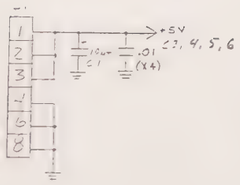
REVISIONS					
ZONE	LTR	DESCRIPTION	DATE	APPROVED	
	1	UPDATED ORIGINAL TJAN 85 BUDD	2-11-85	KL	
	2	UPDATED PROTOTYPE 5MAY 85 BUDD	5-6-85	KL	
	A	REV PER ECO# 01713 JM 1-19-84	1-31-84	KL	
	B	REV PER ECO# 01720 RL 3/22/84	3-27-84	KL	
	C	UPDATED PER DOC. ACCURACY PROG PER ECO 02173 6-19-85 BH	6/24/85	FK	

FRONT PANEL MEMBRANE SWITCH ASSEMBLY









NOTES:
1- UNLESS OTHERWISE SPECIFIED:
A) RESISTANCE VALUES ARE IN OHMS 1/4W, ±5%,
B) CAPACITANCE VALUES ARE IN MICROFARADS.
2.- ALL SINGLE LED'S ARE TAU-TRON PN 2274-4430.
3- ALL OTHER LED TYPES ARE HEWLETT PACKARD LIGHT BARS AND AS FOLLOWS:

OPTIONAL PN
B - H.P. HLMP 2300
C - H.P. HLMP 2350
D - H.P. HLMP 2670
E - H.P. HLMP 2600
F - H.P. HLMP 2620
G - H.P. HLMP 2635

MAR. 13. '87

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ± FRACTIONS ± 3 PLACE DECIMALS ± 2 PLACE DECIMALS ± 1 PLACE DECIMALS ±	CONTR NO.	tau-tron inc Chelmsford, Ma. 01824
	MATERIAL:	DR J STEINMETZ 11/19/85 CHK K L 2-11-85 APPD	DRAWING TITLE: SCHEMATIC FRONT PANEL PCB S5104
D-57404 / S5104		APPROVED	SIZE D / CODE IDENT NO. / DRAWING NO. 57440 / REV C
NEXT ASSY / USED ON		BY DIRECTION OF	SCALE 1/1 / S5104 / SHEET 1 OF 1
APPLICATION			

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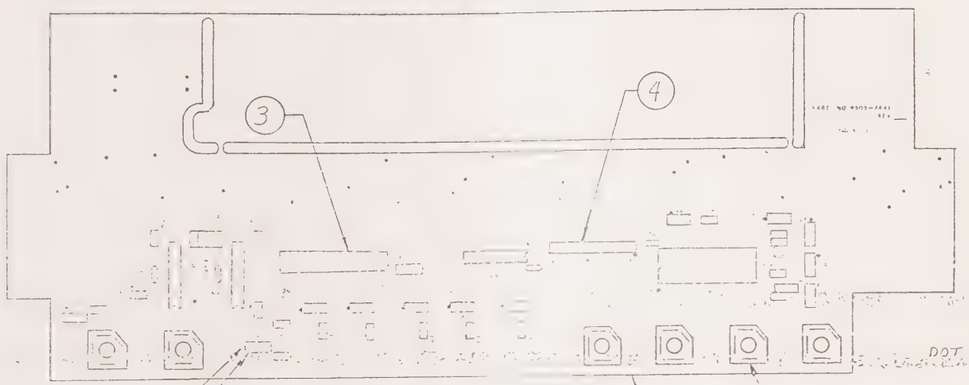
	D	REV PER ECO # 02104 RL 4/22/85	4/22/85	JL	
	E	UPDATED PER DOC. ACCURACY PROG PER ECO # 02137 6-19-85 DH	6/24/85	PX	
	F	REV PER ECO # 02445 TMM 4/30/86	5/7/86	PX	

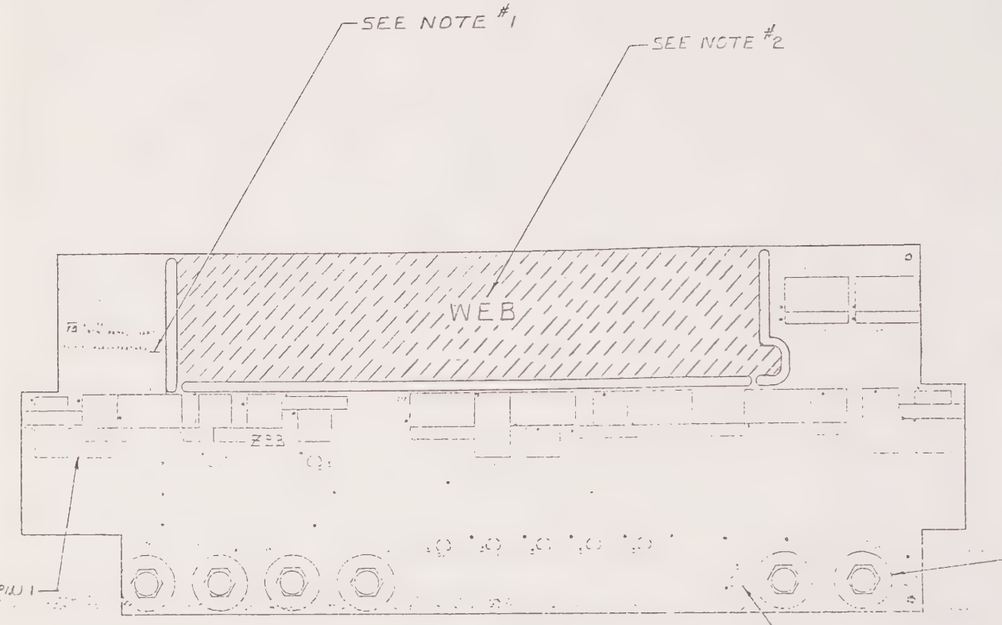


DOT INDICATES EMITTER

SEE DETAIL A

CIRCUIT SIDE

DETAIL A



COMPONENT SIDE

NOTES:
1. PLACE A PERMANENT REVISION LEVEL MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.
2. AFTER WAVE SOLDERING, REMOVE WEB PORTION OF PCB.

MAR. 13. '87

D57435 55104	B.M.P. 2-18-83 R.J.L. 3-2-83 K. BEAUPRE 3-2-83	TAU-TRON ASSEMBLY FRONT PANEL PCB 55104
		D 57442
		1/1 55104 SHEET 1 OF 1

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REV	DESCRIPTION	DATE	APPROVED
A	ECO # C2403	3/15/85	
B	REV PER ECO # C2407	3/15/85	
C	REV PER ECO # 02532	7/22/85	

S1 S2 S3 S4 S5 S6 S7 S8

U1 74LS123 · U2 74LS04 · U3 74LS00 · U4 74LS32 · U5 74LS86 · U6 74LS74 · U7 74LS08 · U8 1488 · U9 74LS161 · U10 74LS251 · U11 74LS251 · U12 74LS251 · U13 1489

R1 30K · R2 1K · R3 10K · R4 15K · R5 1K · R6 100Ω · R7 1K · R8 100Ω · R9 1K · R10 1K · R11 1K

C1 .1µf · C2 33µf · C3 47µf 6V · C4 .47µf · C5 .1µf · C6 .1µf · C7 .1µf · C8 .1µf · C9 .1µf · C10 .1µf · C11 .1µf · C12 .1µf · CE 33µf

E1 60HZ · J1 EXT CLK IN · J2 JITTER OUT · J3 EXT ERR · J4 ERROR SYNC · J5 M SYNC TX · J6 PR SYNC TX · J7 NRZ DATA OUT · J8 NRZ CLOCK OUT · J9 PR SYNC RX · J10 M SYNC RX · J11 BIT ERRORS · J12 RCV ERRORS · J13 NRZ DATA IN · J14 NRZ CLOCK IN · J15 RCV CLOCK OUT · J16 JITTER IN

TP1 M SYNC RX · TP2 PR SYNC RX · TP3 BIT ERRORS · TP4 RCV ERRORS

PROG WORD · POWER LOSS · PB RESET · NOT INSTALLED FUTURE FUNCTION · RS232C · GP18 · +5V · +5V POWER · GND · TXD · RTS · CTS · SIGNAL GND · RXD · CTS · DSR · RLSD

NOTES:
1. UNLESS OTHERWISE SPECIFIED,
   a) ALL RESISTANCE VALUES ARE IN OHMS, ¼ W, ± 5%
   b) ALL CAPACITANCE VALUES ARE MICROFARADS, ± 10%.

REFERENCE DESIGNATION	
LAST USED	UNUSED
C18	FP3
CR1	
E1	
J16	
R11	
S8	S7
U13	

D57586	55101
NEXT ASSY	USED ON
APPLICATION	

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± °
FRACTIONS ± 1/32
3 PLACE DECIMALS ± .005
2 PLACE DECIMALS ± .02
1 PLACE DECIMALS ± .1
MATERIAL:

CONTR NO.		
DR T. MURPHY	11-6-84	
CHK	11/7/84	
APPD K. Rummel	11/8/84	

APPROVED
BY DIRECTION OF

tau-tron inc Chelmsford, Mass. 01824

DRAWING TITLE: SCHEMATIC - REAR PANEL PCB

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57594	C

SCALE ½ | 55101 | SHEET 1 OF 1

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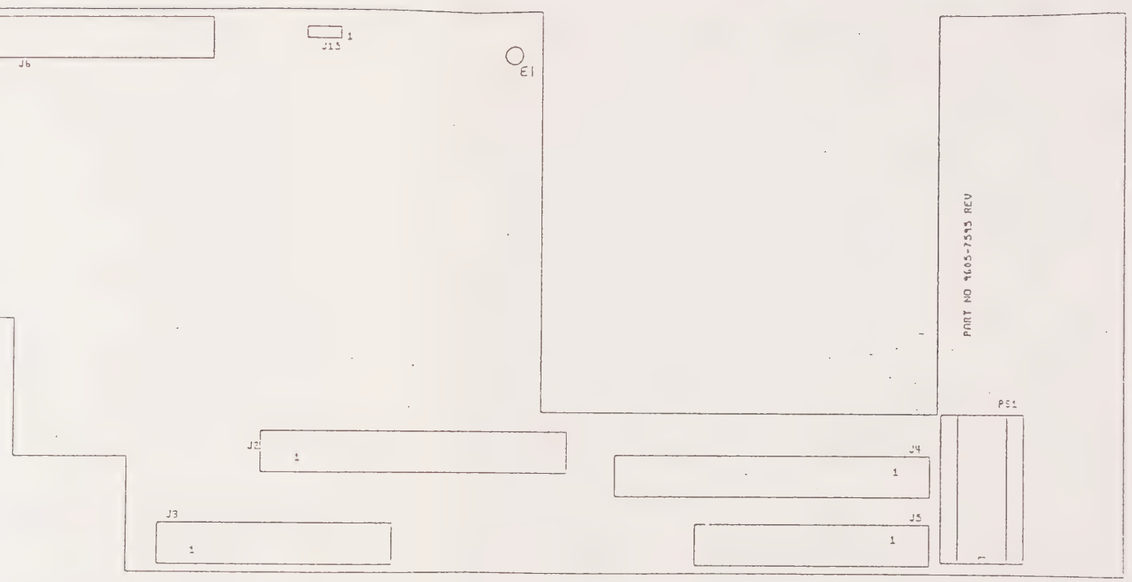
REV	DESCRIPTION	DATE	APPROVED
A	ECO 1	11-21-84	
B	ECO 2	12-10-84	

SEE SHEET #1 FOR REVISIONS



WHERE APPLICABLE- REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.	
57907	55104
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± 2°
FRACTIONS ± 1/32
3 PLACE DECIMALS ± .010
2 PLACE DECIMALS ± .030
1 PLACE DECIMALS ± .060
MATERIAL:

CONTR NO. DCS-1...
DR T. MURPHY 11-14-84
CHK RL 11-21-84
APPD K. BEAUBRE 11-21-84
APPROVED
BY DIRECTION OF

DEC 17 '84

tau-tron
A UNITED GENERAL NATIONAL

DRAWING TITLE
ASSEMBLY
REAR PANEL PCB

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57596	B
SCALE	55104	SHEET 2 OF 2	

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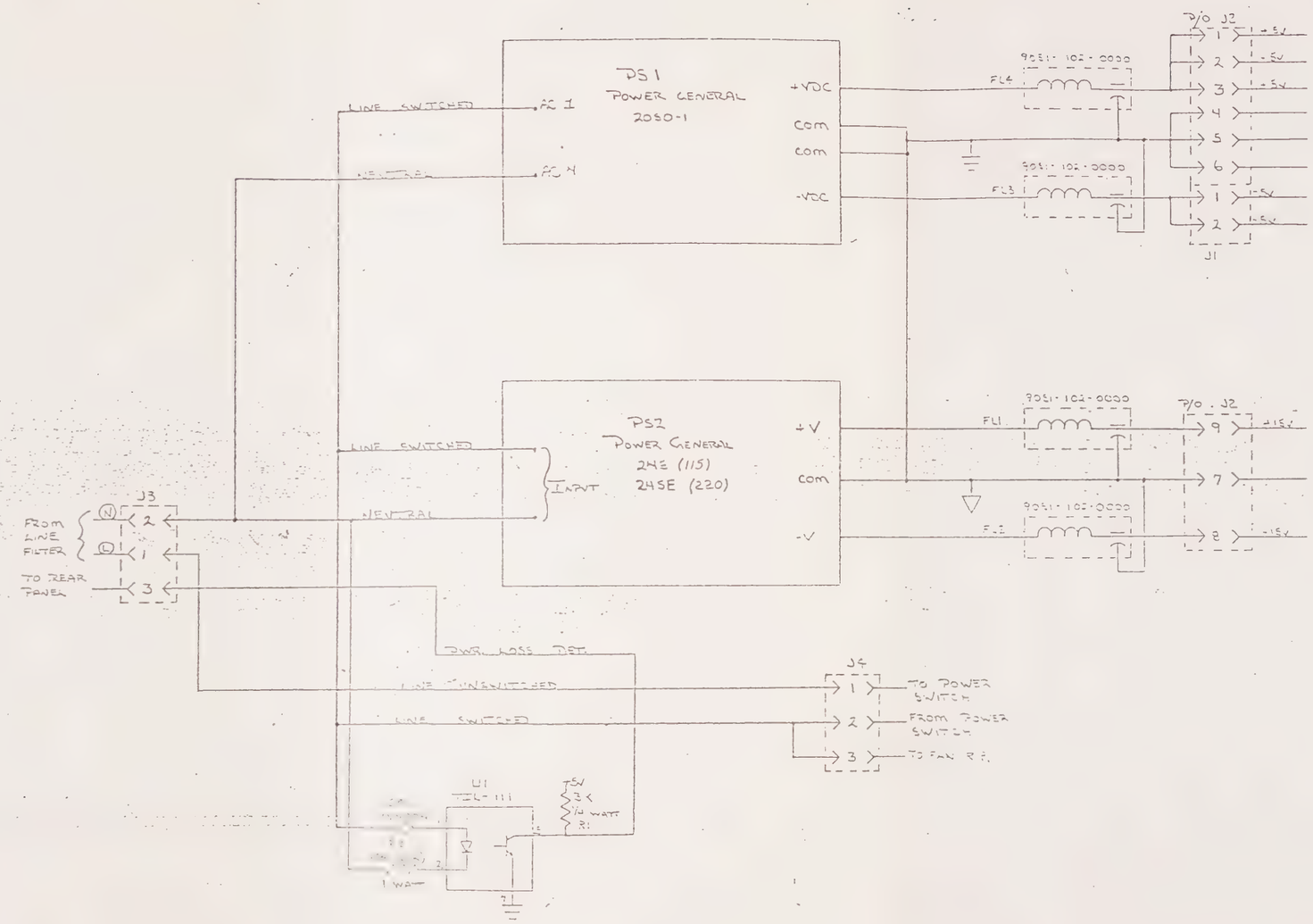
	1	[illegible]	[illegible]	12-5-84	[illegible]
	2	TIED J4-3 TO J4-2	ROSS SIGNATY	1/7/85	[illegible]
	A	UPDATED PER DOC RELEASE	ECR # 02512 MOR/ISWICK	6/24/86	BK



NOTES:

1. VALUES & PART NO. IN PARENTHESIS ARE FOR 220 V OPTION.
2. PS1 MUST BE JUMPER SELECTED BETWEEN 110V & 220V AS FOLLOWS: 110V JUMPER 1-3, 2-4 PS1-J1, 220V JUMPER 2-3 (PS1-J1 OPEN).

REFERENCE DESIGNATIONS	
LAST USED	UNUSED
FL4	
J4	
R2	
U1	
PS2	
CR1	

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

D-57599	S5104
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ANGLES ±
FRACTIONS ±
3 PLACE DECIMALS ±
2 PLACE DECIMALS ±
1 PLACE DECIMALS ±
MATERIAL:

CONTR NO. [illegible]
DR [illegible] 11-3-84
CHK [illegible]
APPD [illegible] 2-6-84
APPROVED
BY DIRECTION OF

tau-tron inc
Chelmsford, Ma. 01824

DRAWING TITLE
SCHEMATIC
POWER DISTRIBUTION

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57537	A

SCALE ~ | S510N | SHEET 1 OF 1

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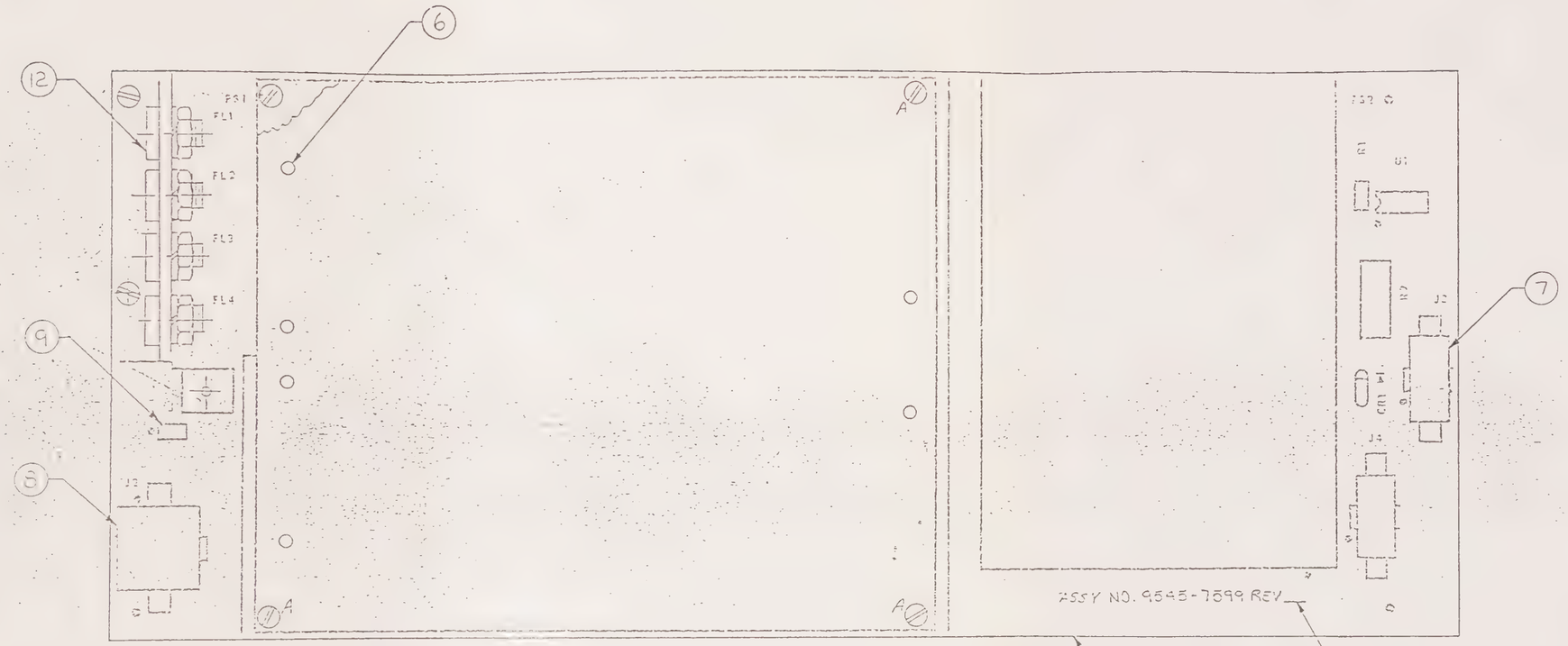
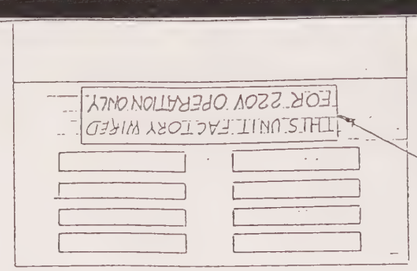
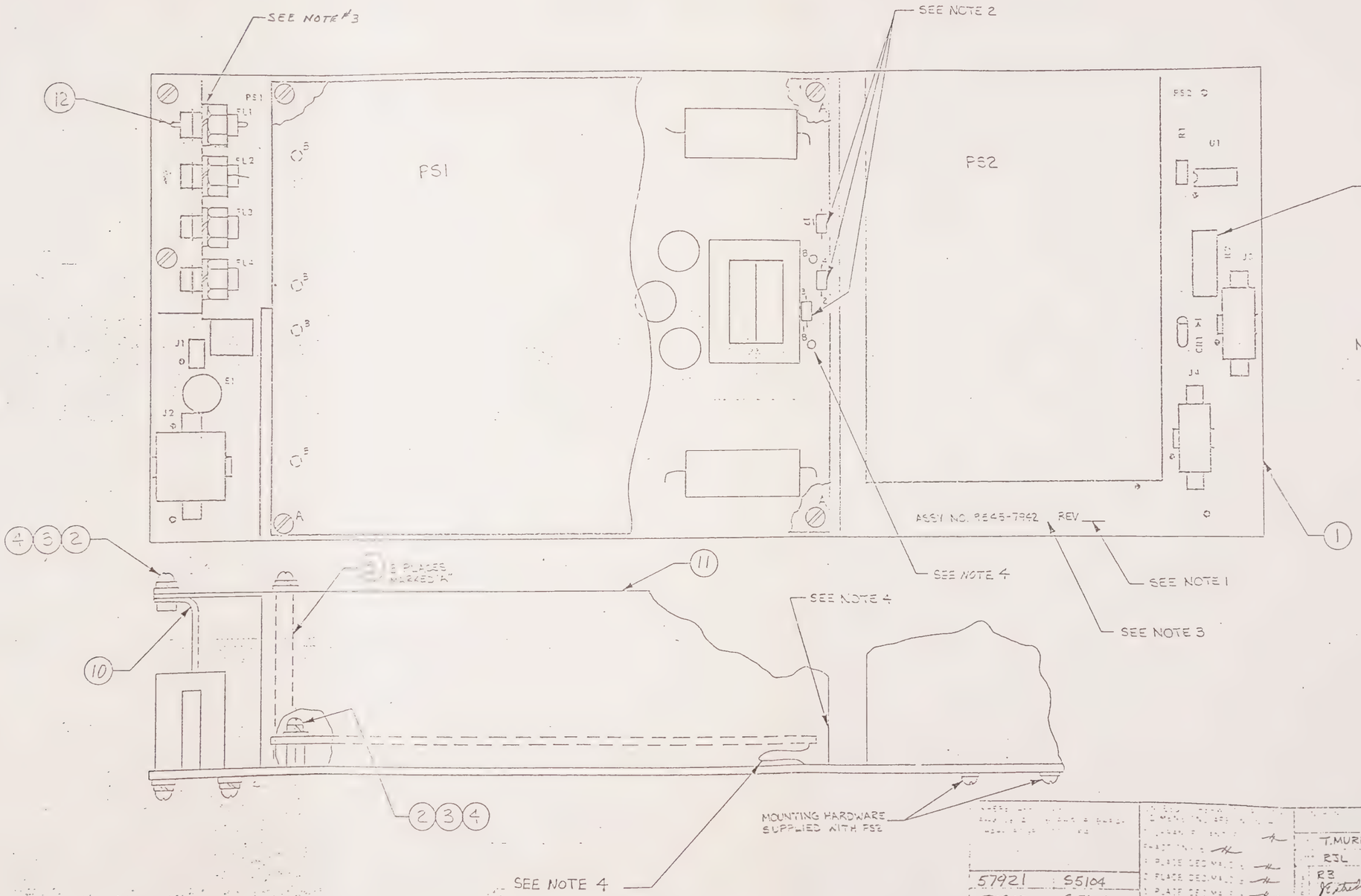
	1	UPDATED TMM 1-18-85	1-23-85	PC
	A	UPDATED PER DOC RELEASE [illegible]	6/24/16	JA



1	UPDATED	TMM 1-17-86	2/12/86	KL

SEE SHEET 1 FOR REVISIONS





NOTES:

1. PLACE THE ASSEMBLY PARTS LIST REVISION MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.
2. FOR 220 VOLT OPERATION REFERENCE P.L. 9E505-7907-1. REMOVE JUMPERS FROM TERMINALS 1-3, 2-4 AND J1. ADD JUMPER FROM TERMINALS 2-3. ADD LABEL ITEM 5 CHANGE R2.
3. TIGHTEN FILTERS A MAX OF 3 INCH POUNDS, A MIN OF 2 INCH POUNDS.
4. WIRE PS1, 6 PLACES MARKED "B" TO MAIN PCB USING AWG #20 BROWN WIRE 3" LONG WITH 1/4" STRIP EACH END.

57921	S5104	
57907	S5104	
57543-1	S5104	
NEXT ASSY	USED ON	
APPLICATION		

DES T.MURPHY 10-10-85
DWN RJL 10-23-85
CHK RB 10-24-85
ENGR'G APP'D 2-28-86

DEC 17

tau-tron

ASSEMBLY
S5104 POWER DISTRIBUTION

D 57599 REV A

SCALE 2/1 S5104 SHEET 2 OF 2

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ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	DOCUMENT RELEASE ECO#02176	[illegible]	
	B	REV PER ECO# 02481 MCD 5-13-86	5/21/86	PK MC

J1
26-PIN RIBBON
FRONT PANEL
CONTROL

J7-38 (PATT A) J10,11-38	1	2	J7-40 (PATT B) J10,11-40
ER MODE B J12-38	3	4	TX FRAME J10,11-32
BIT/BPV J10-51	5	6	J5-28 (TX DS-B) J10,11,12-28
ER MODE-A J12-52	7	8	J5-24 (TX DS-A) J10,11,12-24
(EX DS-A) J6-24 J7-42 J3-43	9	10	BAT J14-22
CH-B J8-56	11	12	J6-28, J7-44 J8,9-44 (PRBS-9)
CH-A J8-52	13	14	JITTER CON J10,11-52
RX FRAME J9,8-48	15	16	Rx PWR GND
SELECT A J7-36	17	18	PAT SW J14-18
RX-PATTERN J9-52	19	20	STUFF REQ CLK J11-37
	21	22	SIMPLE ERROR J10-53
FRAME SEL DSX J8-9, J11-33, J13-13	23	24	
FRAME/BIT J9-28	25	26	

J2
FRONT PANEL
CONTROLLER

+5V	1	2	+5V
Rx PWR GND	3	4	Rx PWR GND
J2-5 J3,4-6	5	6	J3-6 J2,4-5
J3,4,5,6-8	7	8	J2,4,5,6-7
J3,4,5,6-10	9	10	J2,4,5,6-9
J3,4,5,6-12	11	12	J2,4,5,6-11
J3,4,5,6-14	13	14	J2,4,5,6-13
J3-16	15	16	J2,4,5,6-15
J3-18	17	18	J2,4,5,6-17
J3-20	19	20	J2,4,5,6-19
J3-22	21	22	J2,4,5,6-21
J3-24	23	24	J2,4,5,6-23
J3-26	25	26	J2,4,5,6-25
J3-28	27	28	J2,4,5,6-27
J3-30	29	30	J2,4,5,6-29
J3,4,5,6-32	31	32	J2,4,5,6-31
J3,4,5,6-34	33	34	J2,4,5,6-33
J3,4-36	35	36	J2-35
J3,4-38	37	38	J2,4-37
J3,4-40	39	40	J2,4,5,6-39
J3,4-42	41	42	J2,4-41
J3,4-44	43	44	J2,4,5,6-43
J3,4-46 J13-33 (CNTR3)	45	46	J2,4-45
J3,4-48 J13-31 (FRSEL)	47	48	J2,4,5,6-47
J3,4-50	49	50	J2,4-50
J3-51	51	52	J4-51
J2-53 J3,4-54	53	54	J3-53/J2,4-54
J2-56 J3-55,56	55	56	J2-55,56 J3-55,56

+5V, Rx PWR GND
D7 J3,4,5,6-39
D6 J3,4,5,6-37
D5 J3,4,5,6-35
D4 J3,4,5,6-33
A15 J3-16
A14 J3-18
A13 J3-20
A12 J3-22
A11 J3-24
A10 J3-26
A9 J3-28
A8 J3-30
RD J3,4,5,6-32
MEMRD J3,4,5,6-34
MEMWR J3,4-36
MC SYNC J2,4-38
STATUS 0 J3,4-40
BUS RQ J3,4-42
INTRQ J3,4-44
CNTR1 J3,4-50
PCI J3-51
PCO J2-52
J2-55,56 J3-55,56
J3-56

FULL STD

J3
CPU/RS232/GPIB

+5V	1	2	+5V
Rx PWR GND	3	4	Rx PWR GND
J3-5 J2,4-6	5	6	J2,3-5 J4-6
J2,4,5,6-8	7	8	J2,3,5,6-7
J2,4,5,6-10	9	10	J2,3,5,6-9
J2,4,5,6-12	11	12	J2,3,5,6-11
J2,4,5,6-14	13	14	J2,3,5,6-13
J2-16	15	16	J2,3,5,6-15
J2-18	17	18	J2,3,5,6-17
J2-20	19	20	J2,3,5,6-19
J2-22	21	22	J2,3,5,6-21
J2-24	23	24	J2,3,5,6-23
J2-26	25	26	J2,3,5,6-25
J2-28	27	28	J2,3,5,6-27
J2-30	29	30	J2,3,5,6-29
J2,4,5,6-32	31	32	J2,3,5,6-31
J2,4,5,6-34	33	34	J2,3,5,6-33
J2,4-36	35	36	RCV CLK J7-36
J2,4-38	37	38	J2,3-37
J2,4-40	39	40	J2,3,5,6-39
J2,4-42	41	42	J2,3-41
J2,4-44	43	44	J2,3,5,6-43
J2,4-46 J13-33	45	46	J2,3-45
J2,4-48 J13-31	47	48	J2,3,5,6-47
J2,4-50	49	50	J2,3,5,6-49
J4-51	51	52	J3-52
J3-53/J2,4-54	53	54	J4-54 J2,3-55
J2-55,56 J3-55	55	56	PATT CLK J10-51

+5V, Rx PWR GND
D7 J2,3,4,5,6-8
D6 J2,3,4,5,6-10
D5 J2,3,4,5,6-12
D4 J2,3,4,5,6-14
SIGNAL LOSS J7-8
FRAME LOSS J8-8
ZERO'S J7-12
X-BIT J8-12
BIT/BPV ERROR J7-28
ALL 1'S J7-26
SYNC LOSS J4-30
BPV-EC J7-32
J2,3,4,5,6-34
J2,3-36
AMI OUT J6-35
J2,3,4,5,6-38
J2,3,4,5,6-40
J2,3,4,5,6-42
J2,3,4,5,6-44
J2,3,4,5,6-46
J2,3,4,5,6-48
J2,3,4,5,6-50
J2,3,4,5,6-52
J2,3,4,5,6-54
J2,3,4,5,6-56
PRBS SYNC
+5V

PARTIAL STD

J4
ERROR
COUNTER

+5V	1	2	+5V
Rx PWR GND	3	4	Rx PWR GND
J4-5 J3,3-6	5	6	J3-5
J2 3,5,6-8	7	8	J2 3,4,6-7
J2,3,5,6-10	9	10	J2,3,4,6-9
J2,3,5,6-12	11	12	J2,3,4,6-11
J2,3,5,6-14	13	14	J2,3,4,6-13
SIGNAL LOSS J7-8	15	16	J2,3,4,6-15
FRAME LOSS J8-8	17	18	J2,3,4,5,6-17
ZERO'S J7-12	19	20	J2,3,4,6-19
X-BIT J8-12	21	22	J2,3,4,6-21
BIT/BPV ERROR J7-28	23	24	J2 3,4,6-23
ALL 1'S J7-26	25	26	J2,3,4,6-25
SYNC LOSS J4-30	27	28	J2 3,4,6-27
BPV-EC J7-32	29	30	J2,3,4,6-29
J2,3,5,6-32	31	32	J2,3,4,6-31
J2,3,5,6-34	33	34	J2,3,4,6-33
J2,3-36	35	36	AMI LITE J6-35
J2,3-38	37	38	XMIT LITE J6-37
J2 3-40	39	40	J2 3,4,5,6-39
J2,3-42	41	42	J2 3,4,5,6-41
J2 3-44	43	44	J2 3,4,5,6-43
J2 3-46 J13-33	45	46	
J2 3-48 J13-31	47	48	J2 3,4,5,6-47
J2 3-50	49	50	J2 3,4,5,6-49
	51	52	
J4-53 J2,3-54	53	54	J2 3,4,5,6-53
PATT CLK J10-51	55	56	AMI BIPOLAR J10-53

PRBS SYNC
+5V

PARTIAL STD

J5
JITTER
TX

Rx PWR GND	1	2	+5V
	3	4	Rx PWR GND
-5.1 TX POW DIST J6-5	5	6	J5-5
	7	8	J2,3,4,5-8 J2,3,4,5-7
	9	10	J2,3,4,6-10 J2,3,4,5-9
	11	12	J2,3,4,6-12 J2,3,4,5-11
	13	14	J2,3,4,6-14 J2,3,4,5-13
	15	16	J6-16 (FX DS DATA) J7-27, J8-28 J2,3,4,5-15
	17	18	J6-18 (FX DS CLK) J7-29, J8-30 J2,3,4,5-17
	19	20	J2,3,4,5-19
THRU JITTER DATA	21	22	J6-22, J10-22 J2,3,4,5-21
	23	24	J1-8 (TX DS-A) J10,11,12-24 J2,3,4,5-23
	25	26	J2-6 (TX DS-B) J10,11,12-28 J2,3,4,5-25
	27	28	J2,3,4,5-27
	29	30	J2,3,4,5-29
	31	32	J2,3,4,6-33 J2,3,4,5-31
	33	34	J2,3,4,5-34 J2,3,4,5-33
MODULATION MON. J6-36	35	36	AMP LITE J5-35
	37	38	J5-37
	39	40	J2,3,4,5-39
EXT. JITTER J6-42, J15-15	41	42	J5-41
	43	44	J2,3,4,5-43
	45	46	
TX DS J6-48, J11-43	47	48	J2,3,4,5-47
J6-50 (TX CLK) J10-23, J11-53	49	50	J2,3,4,5-49
	51	52	
PRBS SYNC	53	54	PRBS GND
+15V	55	56	-15V

PARTIAL STD

J6
JITTER
RX

+5V	1	2	+5V
Rx PWR GND	3	4	Rx PWR GND
-5V RX POW DIST J5-6	5	6	J5-5
	7	8	J2,3,4,5-8
	9	10	J2,3,4,5-10
	11	12	J2,3,4,5-12
	13	14	J2,3,4,5-14
	15	16	J5-16 J7-27, J8-28
	17	18	J6-18 J7-29, J8-30
	19	20	
	21	22	J5-22, J10-22
	23	24	J1-9, J7-42 J2, 3-40 (RX DS-B) J7,8,9-44
	25	26	J1-12 (RX DS-B) J10,11,12-28
	27	28	
	29	30	
	31	32	J2,3,4,5-32
	33	34	J2,3,4,6-34
	35	36	J5-36
	37	38	
	39	40	
J5-42, J15-15	41	42	
	43	44	
	45	46	
J5-48, J11-43	47	48	
J5-50 J10-23, J11-53	49	50	
	51	52	
PRBS GND	53	54	
+15V	55	56	

PARTIAL STD

J7
INPUT

+5V	1	2	+5V
Rx PWR GND	3	4	Rx PWR GND
	5	6	
	7	8	
	9	10	
	11	12	
	13	14	
	15	16	
	17	18	
	19	20	
	21	22	
	23	24	
	25	26	
	27	28	
	29	30	
	31	32	
	33	34	
	35	36	
	37	38	
	39	40	
	41	42	
	43	44	
	45	46	
	47	48	
	49	50	
	51	52	
	53	54	
	55	56	

+5V, Rx PWR GND
SIGNAL LOSS J4-16
FRAME SEL DSX J1-33, J13-13 J1-23
BERDS J4-20
RX SL CLOCK J13-12
RX SL DATA J10-16
EXT CONTROL J13-21
RX SL DATA J8,9-26-28
RX SL CLK J8,9-30
RX PATT DATA J8-31, J9-32
RX PATT CLK J8-35, J9-36
J1-33, J13-13
J1-23
BERDS J4-20
RX SL CLOCK J13-12
RX SL DATA J10-16
A2 J4-24
BPV-EC J4-30
BPV-EC J13-17
RCV CLK J4-35
J1-1 (PATT A) J10,11-56
J1-2 (PATT B) J10,11-42
J1-3, J6-24 J8,9-24 (RX DS-A)
J1-12, J6-26 J8,9-44 (RX DS-B)
DS1/E1-B B2
DS1/E1-A B2
RSP GND
+15V
DS1/E1-A A2
DS1/E1-B A2
+5V

J8
FRAME DEMUX

+5V	1	2	+5V
Rx PWR GND	3	4	Rx PWR GND
	5	6	
	7	8	
	9	10	
	11	12	
	13	14	
	15	16	
	17	18	
	19	20	
	21	22	
	23	24	
	25	26	
	27	28	
	29	30	
	31	32	
	33	34	
	35	36	
	37	38	
	39	40	
	41	42	
	43	44	
	45	46	
	47	48	
	49	50	
	51	52	
	53	54	
	55	56	

+5V, Rx PWR GND
FRAME LOSS J4-12
X-BIT J4-22
RX FRAME J13-15, J1-43
RX PATTERN DATA J7-31, J4-32
RX PATTERN CLK J7-35, J8-36
J5,6-10 J7-27 (RX DS DATA)
J5,6-12 J7-29 (RX DS CLOCK)
J1-4, J6-24 (RX DS-A) J7-42, J8-43
J1-12, J6-26 J7-44 RX DS-B
RX FRAME J1-15, J1-43
DS1/E1-A B2
DS1/E1-B B2
RSP GND
+15V
DS1/E1-A A2
DS1/E1-B A2
+5V

D-5191-3	55104		
NEXT ASSY	USED ON		
APPLICATION			

WHERE APPLICABLE
REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± [illegible]
FRACTIONS ± [illegible]
3 PLACE DECIMALS ± [illegible]
2 PLACE DECIMALS ± [illegible]
1 PLACE DECIMALS ± [illegible]
MATERIAL: N/A

CONTR NO.
DR T. MORROW 5-14-86
CHK'R [illegible] 5/20/86
APPD [illegible] 12-22-87
APPROVED
BY DIRECTION OF

tau-tron inc
Chelmsford, ma 01824

DRAWING TITLE
SCHEMATIC
55104 V4 MOTHER BOARD

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57916	B

SCALE [illegible] 55104 SHEET 1 OF 2

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ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1 FOR REVISIONS		

J9
PATTERN SYNC

+5V	1	2	+5V
PWR GND	3	4	RX PWR GND
PR SYNC RX J13-39	5	6	
RP ERRORS J13-37	7	8	
	9	10	
	11	12	
	13	14	
	15	16	
	17	18	
FRAME ERROR J2-19	19	20	NRZ DATA OUT J13-27
	21	22	TX PR SYNC J13-25
BIT/FRM ERR OUT J4-24	23	24	
	25	26	BRES CONTROL J7-25, J13-21
FRAME/BIT J1-25	27	28	
SYNC LOSS J4-23	29	30	NRZ CLK OUT J13-19
RX PATT DATA J7, 8-31	31	32	
	33	34	PROG WORD J13-11
RX PATT CLK J7, 8-35	35	36	
	37	38	ERROR REG J12-38
(RX DS-A) J1-9, J1-24 J7-42, J8-40	39	40	
	41	42	
J1-12, J8-25 J7, 8-44 (RX DS-B)	43	44	J11-44 (PATT DATA)
	45	46	
RX FRAME J1-15, J8-48	47	48	PATT CLK J10-43, J13-3
	49	50	
RX PATT J1-19	51	52	BIT/BPV J1-5
	53	54	
	55	56	SINGLE ERROR J1-22

J10
PATTERN/ BIPOLAR ENCODER

+5V	1	2	+5V
TX PWR GND	3	4	TX PWR GND
P-RAIL J12-6	5	6	
N-RAIL J12-8	7	8	
TX DS CLK J11-10	9	10	
	11	12	RX DS CLK' J7-13
TX DS DATA J11-14	13	14	
	15	16	RX DS DATA' J7-15
ERROR SYNC J13-29	17	18	
NRZ DATA OUT J13-27	19	20	J5, 6-50 J11-53 (TX CLK)
TX PR SYNC J13-25	21	22	J5, 6-22 (THRU TX DATA)
	23	24	J1-8, J5-24 J11, 12-24 (TX DS-A)
BRES CONTROL J7-25, J13-21	25	26	
	27	28	J1-6, J5-26 J11, 12-28 (TX DS-B)
NRZ CLK OUT J13-19	29	30	
PROG WORD J13-11	31	32	TX FRAME J1-4, J11-32
	33	34	
	35	36	J1-1 (PATT-A) J7-32; J11-36
ERROR REG J12-38	37	38	
	39	40	J1-2 (PATT-B) J7-40, J11-40
	41	42	
J11-44 (PATT DATA)	43	44	
	45	46	
PATT CLK J10-43, J13-3	47	48	
	49	50	
BIT/BPV J1-5	51	52	JITTER CON. J1-14, J11-52
	53	54	
SINGLE ERROR J1-22	55	56	

J11
MULTIPLEXER

+5V	1	2	+5V
TX PWR GND	3	4	TX PWR GND
μ-SYNC TX J13-40	5	6	
	7	8	
TX DS CLK J10-9	9	10	
	11	12	
TX DS DATA J10-13	13	14	
	15	16	
	17	18	
	19	20	
	21	22	
J1-8, J5-24 J10, 12-24 (TX DS-A)	23	24	
	25	26	
J1-6, J5-26 J10, 12-23 (TX DS-B)	27	28	
	29	30	
TX FRAME J1-4, J10-32	31	32	
FRAME SEL DSI J1-23, J8-9, J13-13	33	34	
J1-1, J7-32 J10-36 (PATT-A)	35	36	
	37	38	
J1-2 (PATT-B) J7-40, J10-40	39	40	
	41	42	
PATT. DATA J10-43	43	44	
	45	46	
PATT CLK J10-47, J13-3	47	48	ERR ERROR J13-1
	49	50	
JITTER CON J1-14, J10-52	51	52	PATT CLK J4-53
	53	54	
	55	56	μP ERROR J4-55

J12
OUTPUT BIPOLAR INTERFACE

+5V	1	2	+5V
TX PWR GND	3	4	TX PWR GND
	5	6	P-RAIL J10-5
	7	8	N-RAIL J10-7
	9	10	
	11	12	
	13	14	
	15	16	J8 J14-21 DSI/C 3A J4-17
	17	18	
	19	20	
	21	22	
(TX DS-A) J1-8, J5-24 J10, 11-24	23	24	
	25	26	
(TX DS-B) J1-6, J5-26 J10, 11-28	27	28	
	29	30	J8 J14-13
	31	32	DSI/C 4A J14-9
	33	34	
DSI/C/2 2A J14-12	35	36	
	37	38	
	39	40	
	41	42	DATA CLK/10 J11-41
	43	44	J8 J14-16
	45	46	DSI/C/2 1A J14-20
	47	48	
	49	50	
	51	52	ER MODE-A J12-7
	53	54	J8 J14-24
	55	56	ER MODE-B J12-8

J13
40-PIN RIBBON

EXT. ERROR J12-47	1	2	TX PWR GND
PATT. CLK J10-47, J11-43	3	4	TX PWR GND
EXT. CLK J11-45	5	6	TX PWR GND
NRZ CLK IN J7-45	7	8	TX PWR GND
NRZ DATA IN J7-43	9	10	TX PWR GND
PROG. WORD J10-33	11	12	TX PWR GND
FRAME SEL DSI J1-23, J8-9, J11-33	13	14	TX PWR GND
EXT. JITTER J5, 6-42	15	16	TX PWR GND
BPV-EP J7-34	17	18	TX PWR GND
NRZ CLK OUT J10-29	19	20	TX PWR GND
BRES CONTROL J7-25, J10-25	21	22	
RCVR CLK OUT J8-13	23	24	TX PWR GND
TX PR SYNC J10-21	25	26	TX PWR GND
NRZ DATA OUT J10-19	27	28	TX PWR GND
ERROR SYNC J10-17	29	30	+5V
PR RESET J2, 3, 4-48	31	32	+5V
POWER DOWN J2, 3, 4-46	33	34	+5V
M SYNC RX J8-15	35	36	+5V
RP ERRORS J9-7	37	38	+5V
PR SYNC RX J9-5	39	40	μ-SYNC TX J11-5

J14
24-PIN MOLEX

1	5	9	13	17	21	
2	6	10	14	18	22	
3	7	11	15	19	23	
4	8	12	16	20	24	

1		13	J12-29 (4B)
2		14	
3		15	
4		16	J12-44 (1B)
5	+5V	17	J12-17 (DSI/C 3A)
6		18	J1-18 (BAT SW)
7		19	+5V (240Ω 1/4W) R1
8	TX PWR GND	20	J12-46 (DSI/C/2 1A)
9	J12-31 (4A)	21	J12-15 (3B)
10		22	J1-10 (BAT)
11		23	TX PWR GND
12	J12-34 (2A)	24	J12-34 (2B)

J15
9-PIN MOLEX POWER CONNECTOR

1	4	7
2	5	8
3	6	9

9 — +15V
8 — -15V
7 — REF. GND
3 — +5V
2
1 — C1 33μF
6
5
4 — PWR GND

WHERE APPLICABLE REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.		CONTR NO.	tau-tron INC Chelmsford, Ma 01824
		DR T. Wepper 10-14-82	DRAWING TITLE SCHEMATIC S5104 V4 MOTHER BOARD
		CHK	
D-57918	S5104	APPD	
NEXT ASSY	USED ON	APPROVED	SIZE D | CODE IDENT NO. | DRAWING NO. 57916 | REV B
APPLICATION		BY DIRECTION OF	SCALE NA | S5104 | SHEET 2 OF 2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± 0°
FRACTIONS ± 0"
3 PLACE DECIMALS ± 0"
2 PLACE DECIMALS ± 0"
1 PLACE DECIMALS ± 0"
MATERIAL:

DEC 19 '82

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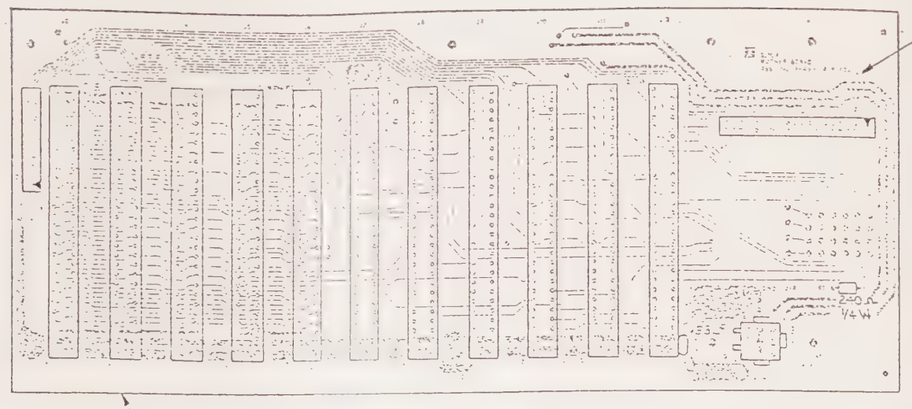
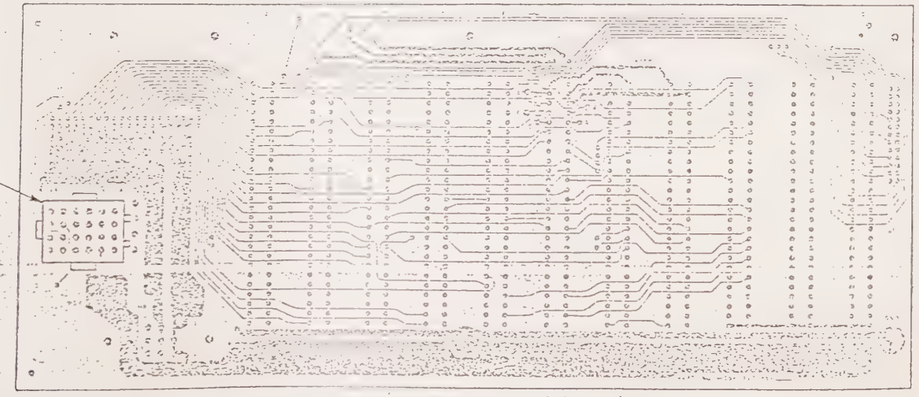
REV	DESCRIPTION	DATE	APPROVED
	I UPDATED TMM 4-25-85	5/7/85	RL
	A DOCUMENT RELEASE ECO#02176	7/15/85	RL



COMPONENT SIDE



CIRCUIT SIDE

NOTES:
1. PLACE A PERMANENT REVISION LEVEL MARK ON THE ASSEMBLY IN THE DESIGNATED AREA

DEC 12

D-57543	S5104	SEE PL 9545-7918	T. MURPHY 1-4-85
PART ASSY	USED ON		1-11-85
APPLICATION			1-11-85

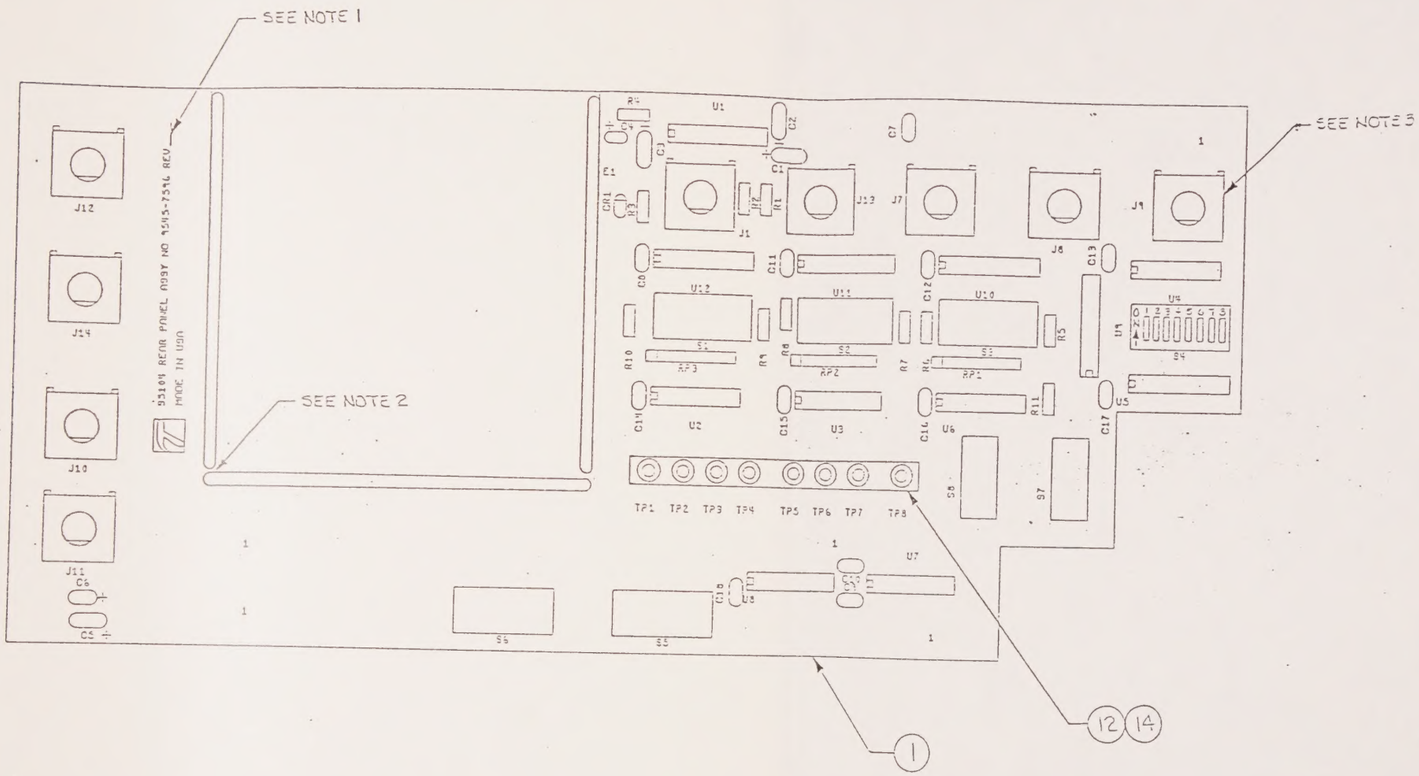
ASSEMBLY
S5104 MOTHER BOARD (V4)

SIZE	ITEM NO.	DRAWING NO.	REV
D	954	57918	A

SCALE 1/1 S5104 SHEET 1 OF 1

THIS DRAWING IS NOT TO BE DISCLOSED TO OTHERS WITHOUT THE PRIOR WRITTEN CONSENT OF TAU-TRON INC.

	DESCRIPTION	DATE	APPROVED
A	DOCUMENT RELEASE PER ECO# 02170	7/31/85	
B	REV PER ECO # 02407	9/23/86	



NOTES:

1. PLACE THE PARTS LIST REVISION MARK ON THE ASSEMBLY IN THE DESIGNATED AREA.
2. CUT AWAY 4 WEBS OF EXTRA STIFFENING MATERIAL AFTER ASSEMBLY.
3. PART MUST BE PERPENDICULAR TO PCB.

57907	5104
NEXT ASSY	USED ON

APPLICATION

WHERE APPLICABLE: REMOVE ALL BURRS & BREAK SHARP EDGES TO 1/64.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± 2°
FRACTIONS ± 1/32
3 PLACE DECIMALS ± .010
2 PLACE DECIMALS ± .020
1 PLACE DECIMALS ± .030
MATERIAL:

DEC 17 '86

CONTR NO. DEV. 12

DR	T.MURPHY	11-16-84
CHK	PC	11-21-84
APPD	K.KRUPA	11-21-84

APPROVED

BY DIRECTION OF

tau-tron inc Chelmsford, MA 01824

DRAWING TITLE
ASSEMBLY
REAR PANEL PCB.

SIZE	CODE IDENT NO.	DRAWING NO.	REV
D		57596	B

SCALE 5104 SHEET 1 OF 2

10 Lyberty Way, Westford, MA 01886
(617) 692-5100 Telex 750245 1-800-TAU-TRON (Outside MA)